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PART III

DEPARTMENT OF TRANSPORTATION

Coast Guard

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REQUIREMENTS FOR MOBILE OFFSHORE DRILLING UNITS

[4910-14-M]

Title 46—Shipping

CHAPTER I—COAST GUARD, DEPARTMENT OF TRANSPORTATION

[CGD 73-251]

REQUIREMENTS FOR MOBILE OFFSHORE DRILLING UNITS

AGENCY: Coast Guard, DOT.

ACTION: Final rule.

SUMMARY: These regulations govern the inspection and certification, design and equipment, and operation of mobile offshore drilling units. Mobile offshore drilling units have previously been subject to various regulations depending on whether they float while engaged in drilling operations, or whether they drill while bearing on the seabed. These regulations will bring all mobile offshore drilling units under one set of uniform, comprehensive regulations, and will provide that all units be inspected and certificated by the Coast Guard.

EFFECTIVE DATE: January 3, 1979.

FOR FURTHER INFORMATION CONTACT:

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SUPPLEMENTARY INFORMATION: On May 2, 1977, the Coast Guard published a proposed rule (42 FR 22296) concerning these amendments. Interested persons were given until June 29, 1977, to submit comments, and a public hearing was held on June 1, 1977, in New Orleans, Louisiana. A total of 79 written comments were received from 58 commenters. A significant amount of duplication was noted. Commenters included private individuals; companies; industry associations; Federal, State, and local government agencies; and labor unions. Eight persons made oral comments at the public hearing.

The regulations governing electrical engineering requirements for mobile offshore drilling units were proposed in the FEDERAL REGISTER of June 27, 1977 (42 FR 32700). Interested persons were given until August 11, 1977, to comment on these proposals. Eight comments were received which related specifically to the requirements for mobile offshore drilling units.

This rule has been reviewed under the Department of Transportation's "Policies and Procedures for Simplification, Analysis, and Review of Regulations" (43 FR 9582, March 8, 1978). A final evaluation has been prepared, and has been included in the public docket.

DRAFTING INFORMATION

The principal persons involved in drafting this rule are: Commander Peter Cronk and Lieutenant Commander Edward Harmes, Project Managers, Office of Merchant Marine Safety, and Edward J. Gill, Jr., Project Attorney, Office of the Chief Counsel.

The letter designations of the Subparts in Part 108 have been changed in order to make them consecutive. Both the new and old designations are set out below:

Proposal	*Final Rule*
Subpart A	Subpart A
Subpart C	Subpart B
Subpart D	Subpart C
Subpart E	Subpart D
Subpart F	Subpart E
Subpart G	Subpart F
Subpart J	Subpart G
Subpart K	Subpart H

DISCUSSION OF COMMENTS

Many revisions have been made to the proposed regulations to improve clarity without changing the substance of the regulations. These revisions are made as a result of comments received, and Coast Guard review of the proposal.

Those changes that significantly alter the proposed regulations, and those items that received considerable comment, but have not been revised, are discussed below.

Concurrent with the development of these National regulations has been an international effort to draft a Code for Mobile Offshore Drilling Units through the International Maritime Consultative Organization (IMCO). The draft Code is near completion and is expected to be submitted for adoption procedures through the Maritime Safety Committee by the end of 1978. Where it has been possible, the National regulations have been developed to reflect the proposed resolution. However, because of the fluid state of the IMCO effort and the need for National regulations prior to adoption of the IMCO standard, some differences between these two are anticipated.

GENERAL COMMENTS

The Environmental Protection Agency expressed concern that the establishment of Subchapter I-A would remove all mobile offshore drilling units from the provisions of 33 CFR Part 147, which provides for the establishment of safety zones around offshore installations. The Coast Guard does not intend to modify the applicability of the safety zone regulations.

Numerous commentors objected to the inclusion in Subchapter I-A of references to other regulations applicable to mobile offshore drilling units, and suggested that all of these regulations be set out in the final rule. The Coast Guard Mobile Offshore Drilling Unit Subcommittee of the National Offshore Operations Industry Advisory Committee considered the inclusion of all applicable regulations in one set of regulations during the early stages of the development of these regulations and rejected the concept as impractical.

Several commentors expressed concern that, regardless of the Memorandum of Understanding (MOU) signed by the Coast Guard and the U.S. Geological Survey (USGS) on 11 April 1977, (42 FR 20198, April 18, 1977), the proposed rulemaking presented apparent areas of regulatory conflict between the Coast Guard and the USGS for those units operating on the Outer Continental Shelf of the United States. Particular concern was directed at those portions of the proposed rule addressing industrial systems; cranes; and riveting, welding, and burning operations. The Coast Guard does not agree that this is a problem. The USCG-USGS Memorandum of Understanding was developed with full consideration given to the proposed rulemaking. In accordance with the provisions of the MOU, a standing committee composed of representatives of each agency has been established to coordinate its implementation. The USGS has also, in their recent revisions to the OCS Orders, referred to the Memorandum of Understanding and applicable Coast Guard regulations.

Although the preamble to the proposed rule indicated that the proposal did not address personnel qualifications or manning standards for mobile offshore drilling units, several commentors made suggestions and recommendations in this area.

The Coast Guard has contracted the services of an independent research firm to conduct a survey, and an analysis of industrial/maritime mobile offshore drilling unit personnel training and qualification requirements. The task, which is anticipated to be completed shortly, will assist the Coast Guard in developing regulations to assure that drilling unit personnel have the skill and knowledge necessary for safe navigation, and operation of the units when they are in the marine mode.

SUBCHAPTER I-A

PART 107—INSPECTION AND CERTIFICATION

One commentor suggested that the word "drilling" be deleted from § 107.01 in order to make the regulations applicable to other types of units engaged in the offshore oil industry. At this time, it is the Coast Guard's

intent to only make the regulations applicable to mobile offshore drilling units. Those portions of the regulations which may be applicable to other vessels of similar configuration will be evaluated for possible future rulemaking action.

Another commentor recommended that the definition of Industrial Personnel in § 107.113 be revised to limit the industrial personnel category to those persons directly engaged in the drilling process. The Coast Guard feels that the definition, as proposed, is accurate, as it states that industrial personnel are those on board for the sole purpose of carrying out the industrial business or function of the unit, which is drilling. The unit's Certificate of Inspection will set forth the required crew and the total number of persons allowed on board the unit.

Seven commentors, apparently relying on the language in 46 CFR 30.10-11, requested that a new paragraph be added to § 107.115 stating that non-self-propelled units normally operating in the waters of any ocean or the Gulf of Mexico 20 nautical miles or less offshore are not seagoing barges. After careful consideration, the Coast Guard has determined that it cannot adopt this comment since it would be inconsistent with previous administrative determinations as to the application of the Seagoing Barge Act, 46 U.S.C. 395. 46 CFR 30.10-11 relates only to tank barges and is not applicable to mobile offshore drilling units. However, the same language appears in 46 CFR 90.10-25. The regulation in 46 CFR 90.10-36 contains the Coast Guard's interpretation of the application of the Seagoing Barge Act. It states that the phrase "every seagoing barge of one hundred gross tons or over in subsections 395(a) and 395(b), Title 46, U.S.C. (sec. 10, 35 Stat. 428, as amended) includes every non-self-propelled vessel of 100 gross tons or over, if such vessel will navigate the high seas or ocean." The terms "high seas or ocean", in 46 CFR 90.10-36 means any area of the ocean seaward of the headlands. Although 46 CFR 90.10-25 is entitled "ocean," it does not define that term. It is merely a statement of what is included in a route designation on a Certificate of Inspection.

In *United States* v. *Gahagan Dredge Corp.* (289 F. 2d 639 (2d Cir. 1961)), the Court adopted the interpretation of the Seagoing Barge Act placed on that Act by the Coast Guard. The interpretation was that the Act applied to barges which navigate seaward of the headlands. This interpretation continues to be the interpretation of the Coast Guard as to the application of the inspection and certification requirements in the Act.

Eleven commentors requested that a paragraph be added to § 107.115 to read that "non-self-propelled units which in fact in the usual course of their operations do not pass outside the line of demarcation dividing inland waters from the high seas, as defined in Section 151 of Title 33, U.S. Code, are not considered 'seagoing barges' for the purpose of this chapter." The line authorized by 33 U.S.C. 151 relating to the application of certain marine safety statutes has no application to the Seagoing Barge Act.

Since a determination and classification of a vessel as to whether or not it is a seagoing barge is within the administrative discretion of the Coast Guard, these barges will be subject to inspection when, in the judgment of the cognizant Officer-in-Charge, Marine Inspection, their operations carry them into waters which are essentially outside of the sheltered waters, and exposed to the effect of the open seas.

Section 107.115 has been deleted because the definition of "Mobile Offshore Drilling Unit" in § 107.111 adequately covers seagoing barges.

Eighteen commentors recommended that the requirement for a biennial inspection in § 107.201, and several other sections of Part 107, be changed to a quadrennial inspection. The Coast Guard's position is that a biennial inspection is required by law, and that these sections cannot be modified. Specifically, 46 U.S.C. 399, states in part "when the inspection of a steam vessel is completed and the Secretary of the department in which the Coast Guard is operating approves the vessel and her equipment throughout he shall make and subscribe a certificate to that effect." The provisions of 46 U.S.C. 391 and 395 require that these inspections be conducted at least once in every two years.

Seventeen commentors thought that the wording of § 107.211(c) did not accurately describe the requirements that would apply to existing uncertificated mobile offshore drilling units for an original Certificate of Inspection. Several versions of alternative wording were suggested.

The Coast Guard agrees that the wording in the proposed rule was not clear, and has modified § 107.211(c) to clarify that existing uncertificated mobile offshore drilling units are subject only to the applicable portions of Subchapter I-A Specified in the Navigation and Vessel Inspection Circular, "Inspection of Existing Mobile Offshore Drilling Units." The Circular is published as Appendix A to Subchapter I-A.

One commentor submitted that the 90 day notification for biennial inspections and drydock examinations for units operating in international service was excessive, and proposed a 30 day notification. On the basis of recent experience in overseas inspections, the Coast Guard agrees that the 90 day notification is not necessary, but feels that 30 days does not allow for enough lead time. Section 107.215(b) has been revised to provide for a 60 day notification.

Fifteen commentors suggested alternative wording for § 107.215(c)(2) addressing biennial inspection for certification of those units previously issued a Certificate of Inspection under 46 CFR Subchapter I. The main thrust of these comments were similar to those addressed to § 107.211(c) and suggested deletion of the reference to the Navigation and Vessel Inspection Circular, "Inspection of Existing Mobile Offshore Drilling Units." The Coast Guard feels that reference to the Circular is necessary because it contains guidance for the application of certain equipment and operating requirements of Subchapter I-A to units that are certificated under Subchapter I. This section has been re-written to clarify its intent.

Nineteen commentors suggested adding a footnote to § 107.231(a)(4) to state that the load line requirements are not applicable to bottom supported units when they are in an operating mode. The Coast Guard agrees, and an appropriate footnote has been added.

Several commentors suggested numerous changes, both editorial and technical, to § 107.235. These comments were accepted, in part, and § 107.235 has been completely rewritten to make it easier to understand. The servicing requirements for hand portable fire extinguishers has been put in a tabular format, and testing requirements for foam systems clarified by the inclusion of a provision that the manufacturer may evaluate the sample of the foam liquid.

Seven comments pointed out the apparent regulatory conflict with the U.S. Geological Survey (USGS) in regard to cranes. The conflict between the Coast Guard regulations and the USGS Gulf of Mexico OCS Order 8, regarding the applicability of crane operation requirements to mobile offshore drilling units, is resolved in the new proposed USGS National Orders. The National Orders will not include crane requirements for mobile offshore drilling units thereby eliminating the regulatory conflict.

Two comments were received concerning § 107.260(c)(3). Requiring a rated load test after repairs or alterations to structural components remains desirable even though they are made under the direct supervision of the manufacturer according to his repair specifications. The addition of the "main hoist" to this requirement would not be appropriate since repairs can be made which do not involve load bearing components of the main hoist

but whose structural integrity should be verified. It is intended that any structural component or mechanism for which a load test is appropriate would require such a test to insure that repairs or alterations are satisfactory.

One comment was concerned with the effect of referring to the API Standards for cranes as opposed to writing specific regulations. The API Standards have the effect of regulation when adopted by reference. Any change to the Standard would have the benefit of Coast Guard review. Any exceptions or modifications to the standards may be made by the Coast Guard by publishing regulations which would preempt the standard.

A suggested revision to § 107.259(b) was accepted. The revised language states that inspectors *conduct* inspections and *witness* tests.

The Coast Guard partially concurred with a recommendation concerning the most appropriate boom angles which should be used for the rated load test in § 107.260(a). This paragraph was revised to include a requirement to conduct the rated load test at the minimum and maximum boom angles usually employed to insure that all structural components were proof tested within the operating range of the crane. Also the Coast Guard did not concur with the recommendation that the crane should be rotated while suspending the proof load. Though there is technical merit to this approach, there are other safety considerations involving physical constraints, danger to the installation and the manner in which proof loads are applied.

Seven comments on § 107.260(c) stated that the rated load test requirements exceed the API RP 2D requirements and are unnecessary. The API Recommended Practice provides for a rated load test after extensive repairs or alterations. The Coast Guard regulations go further by requiring the rated load test after installation, after repairs or alterations (of any kind) to any structural component of the crane (one comment was received in support of this), and after each four years of service. This approach insures that the structural integrity of the crane is verified after the crane is shipped from the factory to the construction site of the vessel and installed. Also, the periodic rated load test helps to determine if there has been any excessive wear and tear on load bearing components brought about by use.

Twelve commentors stated that, in view of present day technology and improved materials, the 24 month drydocking interval specified in § 107.261(a) should be changed to 48 months. A complete examination of the hull structure is required, by law, every two years.

One commentor suggested modifications to §§ 107.261 and 107.265 to provide for a special examination in lieu of drydocking for surface type units when specifically authorized by the Commandant. While the Coast Guard continues to be of the opinion that a conventional drydock examination provides for a more comprehensive inspection for surface type units, it is agreed that under certain conditions a special examination in lieu of drydocking is a viable alternative. Sections 107.261 and 107.265 have therefore been modified to allow surface type units to be specially examined in lieu of drydocking when specifically authorized by the Commandant.

Eleven commentors recommended that the descriptive term "submersible" be added to § 107.265. The Coast Guard does not consider it necessary, for the purpose of this rulemaking, to differentiate between units of the submersible and semi-submersible configurations. Of the small number of seagoing submersible units in operation, the great majority fit the defined category of "Column Stabilized."

One commentor suggested that the provisions of § 107.305(hh) could be misinterpreted as having regard only to "high strength" or "notch tough" steels, and not give adequate consideration to cold temperature properties. After considerable review, the regulation has been rewritten to provide for the inclusion of appropriate information concerning steels in the construction portfolio.

Seven comments suggested that § 107.305(o) read "Location of cranes" instead of "arrangement of cranes". The term arrangement encompasses consideration of location. In this context, it provides for additional information relative to the location of each crane and includes the proximity of other features such as the helicopter deck, lifesaving equipment, structural foundations and effects of loads and moments on the unit.

Paragraph 107.309(b)(1) was believed by eleven commentors to be inappropriate as applied to cranes since they considered cranes to be industrial equipment. This is not concurred with since cranes used for handling the general services of the unit, i.e., materials, supplies and personnel transfer, are the unit's equipment. Cranes or material handling gear used exclusively in an industrial system susch as the derrick or BOP gantry crane will be inspected as industrial equipment.

Seven commentors believed the submittal of crane plans and information in § 107.309(a)(1) would be a burden to the manufacturer. The concept of plan review is fundamental in approval and certification of cranes. To facilitate this process, type approval for manufacturer's models of cranes will apply, in practice, to subsequent orders of the same model, thus substantially reducing the need for repeated plan submittals.

The Coast Guard has revised § 107.309(b) (2) and (3) to clarify the intent of plan review regarding crane hydraulic and pneumatic systems. Cranes with these systems must meet certain requirements in Subpart 58.30 of Title 46 concerning fluid power control systems. Sections 58.30-40 and 58.30-50 describe the plans required to be submitted.

Eleven comments which were rejected affecting §§ 107.258, 107.259, and 107.309 included wording revisions and recommendations to provide for certification of cranes by qualified personnel in addition to Coast Guard inspectors and ABS and International Cargo Gear Bureau (ICGB) certifying authorities. Crane certification was provided to allow inspection by authorities whose certificates are recognized internationally. This would facilitate acceptability of a unit's cranes when it was operating under foreign jurisdictions. For many years, ABS and ICGB have been authorized by the Coast Guard to inspect cargo gear on cargo vessels. It is impracticable for the Coast Guard, at this time, to review, approve, and monitor any other organizations or qualified third parties which may have the capability of certifying cranes according to the requirements of Subchapter I-A.

PART 108—DESIGNS AND EQUIPMENT

Subpart B—Construction and Arrangement

Several commentors apparently misunderstood § 108.114. With regard to internal openings, the intent of this regulation is to provide remote controls or an alarm system for each opening in a watertight deck or bulkhead which is assumed to remain intact in any damage stability calculations. No standards are proposed for those internal openings which are in decks or bulkheads which are not considered watertight for damage stability purposes.

Many of the same commentors stated that it is unreasonable to demand internal closures to be remotely controlled from a normally manned control station. The regulations do not require this. Section 108.114(c)(1) is written to allow either remote controls or an alarm system. Where an alarm system is fitted, remote controls are not necessary.

One commentor, apparently referring to recent IMCO work addressing tank vessels, advocated additional structural fire protection requirements stressing the danger of external fires

and the possibility of a blowout. The Coast Guard does not agree that additional requirements are necessary in this area. The basic purpose of a mobile offshore drilling unit is the exploration and discovery of petroleum resources. It might be argued that the potential for an uncontrolled hydrocarbon flow "blowout" fire makes a unit different than a cargo vessel, however, it has been the experience of U.S. operators that this type of occurrence is best handled in a "preventive" manner. A blow-out fire and its consequences cannot be handled by state-of-the-art on-board fire protection devices. It should be noted that in the rare occurrence of an uncontrolled well flow and fire, the initial reaction of a crew is to abandon the vessel due to their familiarity with the fact that little can be done to save the unit. Lifesaving requirements therefore appear to play a much more important role than the incremental time possibly afforded by increased fixed fire protection systems.

Eight commentors stated that it was not appropriate to include § 108.131(f), of the proposal under the general heading of *Structural Fire Protection* since the purpose of classification of areas is for the design, selection, and installation of electrical equipment. Seven of these commentors also submitted suggested new wording describing the classified locations. These comments have been accepted in part. This section has been removed from the general heading of *Structural Fire Protection* and relocated at § 108.170. An introductory paragraph has also been added. The final wording of this section has been modified from the proposal to be in conformance with the final wording developed in the IMCO Design and Equipment Subcommittee.

Twenty-five commentors addressed the clarity of § 108.151, and several comments cited examples of situations where compliance with the proposed requirements would be impractical, or would impose other safety hazards. Most of these examples were of ballast pumprooms or propulsion spaces in column stabilized units. It was not the intent of the proposal to require two means of escape from these spaces. This section has been completely rewritten to improve clarity. The requirements for general areas and accommodation spaces were separated from the requirements for other spaces in which personnel are normally employed. Paragraphs (b) and (c) were rewritten to eliminate reference to watertight doors and quick acting doors since doors similar to these types of doors are often provided in locations that do not require a watertight door. The intent of the regulation is to provide a suitable primary means of escape that allows a rapid means of evacuation if an emergency should occur.

Twelve commentors recommended that § 108.160 be modified to include the actual requirements, and not refer to ANSI Code A14.3. Another commentor suggested that the issue date of the ANSI Code be included for clarification. Section 108.160 was intended to reference ANSI A14.3 for all features of fixed ladders not just width. The Coast Guard currently reviews fixed vertical ladders on inspected vessels to that standard. The text of this section has been revised to include excerpts from ANSI A.14.3(1956), referring to the code only in regard to the requirement for a protective cage or ladder safety device.

Two commentors expressed different opinions in addressing § 108.201(a). One suggested deletion of the provision allowing six industrial personnel not regularly employed on the unit to be accommodated in one space, and the other suggesting that the six person provision be expanded to cover all personnel. This section has not been changed in the final rule. The Coast Guard feels that there should be no difference in accommodation spaces for a units' regular complement of industrial personnel and the required crew; the only exception being those industrial personnel onboard for short periods to conduct specialized operations. The four person per space standard is identical to the regulations applied to other types of vessels inspected and certificated by the Coast Guard.

One commentor, in addressing § 108.209, recommended that a requirement for specific medical gear and a medically trained crewmember be set forth in the regulations. While this section has not been revised, the Coast Guard agrees that the subject of specific medical equipment and personnel training needs to be addressed not just for mobile offshore drilling units but for all vessels. A Notice of Proposed Rulemaking is currently being prepared, with the assistance of the U.S. Public Health Service, that will propose requirements in these areas.

Thirteen commentors noted that the provision of § 108.219 was not consistent with the requirements for guardrails in 46 CFR Subchapter I. This discrepancy was not intended, and this section has been revised to be consistent with existing regulations.

Two commentors stated that the requirement for helicopter deck size in § 108.233(a), being based on rotor diameter, would result in an inordinately large deck for a tandem rotor helicopter. Both commentors submitted extensive data on these aircraft, and requested that the Coast Guard revise the regulations to provide for this type of helicopter. In the development of the Notice of Proposed Rulemaking, the Coast Guard did not consider tandem rotor helicopters in specifying minimum landing deck size. The Coast Guard has received relevant information from the Federal Aviation Administration, and the question of tandem rotor helicopters was discussed at length at the IMCO Design and Equipment Subcommittee. The final regulations have been modified to include specification for minimum helicopter deck size if tandem rotor helicopters are utilized.

Seven commentors felt that the structural requirements for helicopter decks in § 108.235 should be more clearly stated, and should be consistent with classification society rules. The Coast Guard has rewritten this section to clarify the intended loading conditions, and they are generally based on classification society standards. The Coast Guard feels, however, that there is a need to investigate this requirement further to ensure that the currently used standard of 75 percent maximum helicopter weight on each main landing gear adequately matches the design capability of the helicopters used in offshore operations. If considered necessary, the Coast Guard will address this question again in future rulemaking. The revised regulations cross reference the FAA limit drop test which is used to define the design impact loading capability for each helicopter model. This replaces the previous reference to the collapse load of the landing gear.

One commentor was of the opinion that the 1.5 meter wide safety net proposed in § 108.235(f) was more than adequate and could itself possibly constitute an obstruction. To make this regulation more specific, and ensure that the safety net does not constitute an obstruction, the maximum height that the outer edge of the net may extend above the deck surface has been specified in the final rule.

Nine commentors suggested that the Coast Guard revise § 108.235(g) to require both a main and an emergency access route to the helicopter deck in lieu of the proposal of two access routes. It was stated that it may not be practical to provide two routes of equal construction and that this recommendation was consistent with present IMCO work. The Coast Guard agrees and has revised § 108.235(g) as suggested.

The Federal Aviation Administration considered the language in § 108.237 as being too vague and unenforceable. It was suggested that if the space available on a unit prevents compliance with National Fire Protection Association Bulletins #407, Aircraft Fuel Servicing, and #30, Flam-

mable and Combustible Liquid Code, "safe" storage location distances to the landing area or sources of vapor ignition should be specified. The Coast Guard does not agree with these observations. The referenced NFPA Standards were reviewed and are intended for land based aircraft operations, and not entirely appropriate for mobile offshore drilling units. Coast Guard regulations already incorporate much of the subject matter in NFPA #30 such as fire protection, tank design and testing, piping systems, and venting. The provisions of NFPA #407 addressing aircraft fueling hose have been adopted by the Coast Guard (§ 108.239(g)). The regulations, as presently written, will allow the Coast Guard to review and evaluate each helicopter fueling facility proposed for installation on a mobile offshore drilling unit.

One commentor suggested that the reference to the FAA Helicopter Design Guide (AC 150/5390-1A, November 5, 1969) be deleted from § 108.241 since it did not contain significant information pertaining to mobile offshore drilling units. It was further suggested that specific requirements on visual aids for helicopter facilities be inserted in the regulations. The commentor suggested the wording which has been developed at IMCO as of June 1977 be used. Since the publication of the proposed rule, the Federal Aviation Administration has updated and republished their Heliport Design Guide (AC No. 150/5390-1B August 22, 1977). The revised design guide includes the IMCO wording as submitted by the commentor, and makes reference to U.S. Coast Guard regulations for mobile offshore drilling units. Based on the aforementioned developments, the Coast Guard agrees with the commentor and has included in the final rule the agreed upon IMCO wording addressing the lighting and marking of helicopter facilities.

Subpart C—Stability

One commentor suggested that Subpart C of Part 108 be eliminated because future revisions of the American Bureau of Shipping (ABS) rules may not agree with this Subpart. The Coast Guard does not agree. The stability regulations of Subpart D prescribe minimum standards of intact and damage stability for certification. Should changes to these regulations become necessary or desirable, appropriate Notices of Proposed Rulemaking will be issued. The Coast Guard cannot anticipate possible changes to the ABS rules, nor the acceptability or unacceptability of future ABS rules for Coast Guard certification purposes.

Ten commentors suggested that § 108.303 require "positive stability" in lieu of "positive metacentric height in the upright equilibrium position" for the full range of drafts. The commentors believe that the word "stability" provides for a more comprehensive and universal requirement, and that having positive metacentric height is insufficient. The Coast Guard does not agree. The basic intact stability requirement for all units in all anticipated drafts and loading conditions is that positive metacentric height (GM) be maintained. Use of the term "positive stability" could be misinterpreted to mean other stability parameters such as positive righting arm or positive righting moment. However, after careful consideration of this comment, the Coast Guard does believe that § 108.303 needs to be modified to more clearly indicate the basic metacentric height requirements. Section 108.303 has been rewritten to indicate the minimum metacentric height requirements of 51 mm (2 inches) at all drafts.

Eleven commentors suggested that a new section be added to Subpart C to allow the use of alternate stability requirements if approved by the Commandant. Since § 108.105 allows substitutions which insure a degree of safety consistent with the minimum standards of Subchapter I-A, it is not necessary to specifically indicate the treatment of alternate stability criteria. All such proposals would be considered in accordance with § 108.105(b).

One commentor noted that the determination of the downflooding angle and the meaning of the term "small openings" under § 108.305(c) are inexact and subject to varied individual interpretations. The commentor believes that openings fitted with the weathertight appliances specified in § 108.114(b), except ventilation intakes and outlets for engine rooms, crew spaces, and other spaces where ventilation is required at all times, should not be considered as downflooding openings provided they immerse after the point of wind-heeled static equilibrium (angle of the first intercept of the righting movement curve). The Coast Guard agrees. New § 108.301 (c) and (d) have been added to define downflooding and downflooding angle more precisely. Section 108.305(c) has been modified accordingly, and the first intercept has been indicated on graph 108.305.

Several commentors suggested that use of a reduced wind velocity of 25.8 meters per second (50 knots) be allowed in the calculation of wind heeling moment (Hm) for certain operating conditions. Some commentors believe that is necessary for units certificated for operation only in lakes, bays, and sounds beyond the coastline. Some commentors believe this is necessary for short field moves and special operations of existing units, such as drilling or repairing in shallow or sheltered waters. Other commentors believe this necessary for a number of existing units which are designed to allow the legs to be raised above the normal towing position to transit extremely shallow water areas. The Coast Guard has considered these comments in depth and does not agree that a reduced wind velocity should be allowed for special operating conditions or geographical areas. Prior experience indicates that mobile offshore drilling units may be subject to unexpected severe weather while in transit. Under the provisions of these regulations, new mobile offshore drilling units must be certificated for full ocean service.

Existing units will be certificated in accordance with the provisions of the Navigation and Vessel Inspection Circular, "Inspection and Certification of Existing Mobile Offshore Drilling Units". The acceptability of a reduced wind velocity stability criteria for field transit and other special operating conditions of existing units will be determined on an individual basis when requested by the owner during the certification process.

Several commentors suggested that wind heeling moments determined from wind tunnel test data be permitted as an alternative to the wind heeling moment calculations of § 108.311. The Coast Guard agrees. Proposed § 108.105(a) indicates that substitutes may be accepted if they provide an equivalent level of safety. Since wind tunnel test data and results would be subject to the same review as the calculations of § 108.311, the Coast Guard can determine whether the data and results show that an equivalent level of safety is provided. Some commentors suggested that § 108.311 be revised to include wind tunnel tests; however, since this would be a substitution for required calculations, the Coast Guard finds it more appropriate to clarify § 108.105(a) by adding "calculations," to the list of acceptable alternatives.

One commentor observed that § 108.315(a) prohibits progressive flooding which a unit might be able to endure. The commentor believes that progressive flooding should be permitted if the unit arrives at a satisfactory final equilibrium waterline. The commentor indicated that only additional flooding which would cause the unit to be unstable should be prohibited. The Coast Guard does not agree. The damage stability requirements provide minimum standards which the Coast Guard feels should be met or exceeded, not barely met. In case of severe damage, a prudent operator must attempt to control the extent of damage

and flooding to the best of his ability without delay. Since the equilibrium waterline permitted by § 108.315 can be above the main deck, a vessel may be in such a condition that flooding, with attendant increase in draft and heel and reduction in metacentric height, would endanger an already vulnerable vessel. Additional flooding must be prevented, therefore § 108.315(a) remains unchanged.

Two commentors indicated that the damage envisioned by proposed § 108.321(a) is extremely unlikely to occur. The Coast Guard agrees, and proposed § 108.321(a) has been deleted.

One commentor noted that the "uppermost deck" of proposed § 108.321(b) will probably be interpreted to mean uppermost continuous deck, and thus superstructures would not be subject to flooding. The commentor suggested that "uppermost deck" be changed to "uppermost continuous deck or first superstructure deck, where superstructures are fitted." The Coast Guard agrees that the first tier or superstructure would be assumed subject to flooding, and has incorporated the proposed wording.

One commentor interpreted proposed § 108.321(c) to exempt compartments in way of mat bottoms from the flooding assumptions. The intent of the proposed regulation was to require the assumption that each mat compartment be subject to flooding in a manner similar to the hull. Since the mat of a self-elavating unit is not subdivided into as many compartments as the hull and since the mat compartments generally are bounded by sides, top, and bottom of the mat, proposed § 108.321(c) has been revised to more clearly indicate the requirement for assuming each mat compartment to be subject to flooding.

One commentor noted that the permeability of 0.60 for cargo and storage spaces is not realistic and suggested the use of 0.95 for these spaces. The Coast Guard agrees. In those cases where the permeability may be less than 0.95, the actual permeability of the space may be calculated and used in lieu of the values given in Table 108.325. Since this option is provided, and since the tabular values are conservative, the permeability of cargo and storage spaces indicated in Table 108.325 has been changed to 0.95.

Subpart D—Fire Extinguishing Systems

Numerous commentors suggested that the Coast Guard limit the application of § 108.403(a) (3), (4), and (5) to propulsion related or marine systems machinery only. The primary concern was the possible loss of power during critical drilling operations. It was also stated that there was a vast difference between a marine engine room and an industrial engine room. the Coast Guard feels that the fire potential is the same regardless of whether the machinery is utilized for marine or industrial systems, and does not agree with the comments. Coast Guard marine casualty files contain records of internal combustion engine fires that could not be controlled by portable or semiportable equipment. Additionally, the shutdown of drilling equipment can be controlled by the use of manually activated fixed systems. If not promptly combated by adequate firefighting equipment, the fire itself would most likely result in failure of the machinery.

The National Transportation Safety Board (NTSB) commented that the 1,000 BHP limit be removed from § 108.403, and suggested that fixed fire extinguishing systems be required in all internal combustion machinery spaces. The Coast Guard does not agree, and the regulation is published as proposed. The potential of a fire is primarily dependent upon the amount of fuel present. Smaller fires can usually be extinguished using portable or semiportable extinguishers without unreasonable danger to firefighters. A large fire, of course, would present a serious danger to both the personnel and the unit. Regulations for other types of vessels, as well as international conventions, use 1,000 BHP as the division point for fixed extinguishing systems.

The NTSB also stated that, in their opinion, due to the hazardous operational conditions and number of personnel aboard mobile offshore drilling units, § 108.404 should be modified to require fire detection systems in high risk areas (e.g. machinery spaces, paint lockers, lamp lockers, galley and accommodation spaces). As stated in the preceding discussion of structural fire protection, the Coast Guard feels that mobile offshore drilling units closely resemble cargo vessels with respect to relative hazard, and it should be noted that a fire detection system is not required on either a tank vessel or a cargo vessel. Another consideration applicable to mobile offshore drilling units is that the industrial operation requires 24 hour active employment of substantial numbers of personnel. Such personnel are alert and in position to act in an emergency. Therefore, the Coast Guard does not agree that a fixed fire detection system is necessary.

Seven commentors addressing § 108.425(c) recommended deletion of the reference to 46 CFR 162.027, the Coast Guard approval specification for combination nozzles. the Coast Guard does not agree. Other nozzle designs have been tested but have been found unsuitable in the marine environment. If other suitable nozzles are developed, they may be submitted to the Coast Guard for approval, or accepted for installation on a unit under the general equivalency clause in § 108.105.

Sixteen commentors suggested deletion of the requirement in § 108.425(d) for low velocity spray applicator at certain fire stations stating that this equipment was outdated and that a combination nozzle is equally effective and can be put into operation instantly. The Coast Guard feels that while the combination of nozzle does provide a spray pattern, the applicator provides an option to the firefighter of attacking a fire from a greater distance or from around a corner. Approved combination nozzles may be equipped with optional low velocity spray heads if they meet the requirements in 46 CFR 162.027. However, this does not replace the applicator, if required.

Twelve commentors suggested revision of § 108.427, stating that the proposed requirement was in excess of the SOLAS Convention. Taking into consideration the fact that mobile offshore drilling units are in port only on rare occasions, the Coast Guard agrees with the commentors and has revised the regulation to be in conformance with the SOLAS Convention requirements for cargo vessels.

One commentor suggested that § 108.458 be amended to include references to National Fire Protection Association (NFPA) Standards 12–A and 12–B. The Coast Guard is presently working on detailed requirements for halogenated gas extinguishing systems. Portions of applicable NFPA Standards may be referenced in those regulations which will be published in a separate Notice of Proposed Rulemaking applicable to other types of vessels as well as mobile offshore drilling units. Until those regulations are finalized, the Coast Guard will continue to approve halogenated gas extinguishing systems on a case by case basis.

A total of twenty-two commentor suggested insertion into the regulations of a new section providing for the installation of aqueous film forming foam (AFFF) systems for use other than for helicopter facilities as provided for in § 108.487 and § 108.489. Many of the comments suggested AFFF application rates and various extinguishing system details. All of the commentors felt that AFFF was at least as effective as protein foam, and that by not including AFFF systems in the regulations, the Coast Guard was precluding the use of an effective type of fire extinguishing system. The Coast Guard agrees in part with the general philosophy presented by the commentors. AFFF systems are foam systems and may be approved as such on an individual basis. Foam rate and other details may be varied on the

basis of equivalency if variations are justified. A new § 108.474 has been added to the final rule providing that AFFF systems may be installed if approved by the Commandant. This does not alter the intent of § 108.487 and § 108.489 which contain specific requirements for AFFF systems to protect helicopter facilities.

Nineteen commentors recommended complete deletion of the fire protection requirements for helicopter decks equipped with fueling facilities contained in § 108.487. The commentors were of the opinion that these regulations are unnecessary and not justified by actual experience. the Coast Guard does not agree. The requirement for protection of helicopter decks equipped with fueling facilities is based upon the potential hazard.

One commentor felt that the foam application rate required by § 108.487(b)(2) was a carry-over from foam systems for tank protection and was excessive for helicopter protection. The Coast Guard position is that the size of an extinguishing system should be related to the magnitude of the hazard. The application rates in the proposed rule are generally accepted rates for systems using hoses and monitor nozzles.

Three commentors suggested that Table 108.495(b) be amended to include fire extinguishers utilizing Halon 1211. The Coast Guard agrees and has amended Table 108.495(b) to include Halon 1211 fire extinguishers of the classifications presently recognized by the Coast Guard.

Nineteen commentors questioned the purpose of Note 3 to Table 108.495(a). Most of the commentors felt the proposed requirement was excessive and several interpreted the proposal as doubling the number of extinguishers required. In the proposed rule, Note 3 was inadvertently applied to the wrong table. It has been relocated in Table 108.495(b) where it applies to B-V extinguishers that are affected by wind or other environmental conditions. The note requires a doubling in the quantity of agent, not in the number of fire extinguishers, and is applicable to dry chemical and carbon dioxide extinguishers, but not to foam extinguishers. Rather than create a new Class B-VI semiportable fire extinguisher, the Coast Guard feels that the footnote to Table 108.495(b) is adequate.

Subpart E—Lifesaving Equipment

Several commentors questioned the necessity for mobile offshore drilling units to be equipped with covered lifeboats for 100% of the personnel on board as proposed in § 108.503. Two of the commentors felt that the standby boat commonly employed negated the need for lifeboats, while another felt that the number of lifeboats should be determined by the size of the transit crew. Other commentors felt that the requirements were not supported by experience in the Gulf of Mexico or that the requirements should be in accordance with existing regulations for cargo vessels.

The Coast Guard does not agree and the basic requirement remains unchanged. There is no guarantee that a standby boat will be available 100 percent of the time in case of a casualty. Furthermore, during some casualties, personnel have had to enter the water in life preservers at night thus making recovery extremely difficult. The requirement for 100 percent lifeboatage includes both the drilling and transit modes of operation. Redundancy is considered necessary inasmuch as a casualty, such as fire or explosion while on location, or heavy weather while in transit, may cause a lifeboat to become unusable. As the primary escape system, there should be one lifeboat available even if one becomes inoperable. If half of the complement of personnel must use liferafts, there would then still be a powered boat available to pick up persons in the water or to tow liferafts out of danger. An exception has been made only for those units with a small complement of personnel.

One commentor suggested that provisions for lifeboats be minimized and the reference in § 108.503(d) to Subpart 94.20-10 for lifeboat equipment be eliminated. The Coast Guard agrees and has added paragraphs (d) through (g) to § 108.503. These new regulations eliminate certain items of equipment, and include provisions for units not in international service.

The preamble to the proposed rule stated that although the proposal would require either davit launched or throw-over type inflatable liferafts for 100 percent of the persons on board, further consideration was being given to require davit launching equipment for the required inflatable liferafts. Comments on this subject were specifically requested. Four comments addressing the requiring of davit launched liferafts were received, and were all in favor of the installation of davit launched liferafts on mobile offshore drilling units. The commentors pointed out problems in utilizing throw-over type rafts on mobile offshore drilling units such as height above the water, and the probability of entering the water to board the raft, including the possibility of having to jump from a considerable height. It was further pointed out by the commentors that the davit launched liferaft in allowing personnel to board the raft at deck level and be lowered to the water would thereby eliminate most of the problems experienced with throw-over type rafts.

The Coast Guard feels that the shortcomings cited for conventional rafts are accurate. In addition, further testing of a davit launched system has been conducted in the Gulf of Mexico. These tests have shown the davit launched concept to be sound, and the Coast Guard is now approving davit launched systems for installation on vessels. Therefore, § 108.505 and § 108.508 have been modified to require davit launched liferafts where the raft can be launched from more than 3 meters above the water. This provision has been included because anything above that height is considered to be too far to jump and swim to the raft.

Several commentors felt that specific words should be added to § 108.505 allowing for the substitution of inflatable liferafts for the required lifeboats when approved by the Commandant. The Coast Guard feels that the general equivalency clause in § 108.105 makes adequate allowance for the substitution of required equipment providing an equivalent level of safety is maintained.

Ten commentors recommended that the words "against the unit" be deleted from § 108.508(a)(5) stating that these words could pose a compliance problem because of the configuration of some units. The Coast Guard agrees, and has replaced the words "against the unit" with the words "in a location."

Ten commentors suggested limiting the requirement for whistles on life preservers in § 108.514(d) to those units on an international voyage and they seriously questioned the effectiveness of the whistles under any circumstances. The Coast Guard does not agree, and feels that whistles can effectively assist in the location of persons in the water regardless of whether or not the unit is on an international voyage.

Section 108.521 has been revised to require distress signals on all units. This change incorporates the recommendation of the Coast Guard Marine Board of Investigation that investigated the capsizing and sinking of the *Ocean Express* on April 15, 1976.

Subpart F—Cranes and Power Operated Industrial Trucks

Four commentors recommended that the proposed requirements for power operated industrial trucks in §§ 108.611, 108.613, and 108.615 be deleted because power operated industrial trucks are rarely used on mobile offshore drilling units. The Coast Guard does not agree. Power operated industrial trucks are used routinely on mobile drilling units, and the minimum regulations proposed are consid-

ered necessary for safety. These sections have therefore been adopted as proposed.

One commentor questioned the proposed requirement for each truck to be approved by a nationally recognized testing laboratory since the Occupational Safety and Health Administration standards in 29 CFR 1910.178 require approved trucks only in hazardous locations. The Coast Guard feels that testing laboratory certification of all trucks used on mobile offshore drilling units is necessary since the trucks may be utilized in classified areas as defined in § 108.170.

Subpart G—Equipment Markings and Instructions

Two commentors pointed out that the requirements for the marking of lifeboats contained in § 108.645 were not appropriate for the type of survival craft known as a "capsule." One of these commentors also suggested that the marking of the cubic capacity on survival craft was not appropriate for totally enclosed boats. The Coast Guard agrees with both commentors, and has added wording to the regulations to address "survival capsules". The Coast Guard also agrees that lifeboat cubic capacity is an obsolete concept for totally enclosed boats, and has deleted this requirement. Proposed § 108.645(b)(2) has also been deleted because it duplicated requirements of Coast Guard approval specification contained in 46 CFR Subpart 160.033.

Nine commentors felt that the proposed requirements for marking appliances for watertight integrity in § 108.665 were unreasonable in that they would require marking of fittings such as bolted manhole covers. The Coast Guard agrees and has modified the text to specify which appliances must be marked.

Seventeen commentors suggested that § 108.709 be revised to require a litter, of an unspecified type, capable of being used on helicopters. The Coast Guard agrees that the litter provided should be transportable by helicopter. The word "stokes" has therefore been deleted and the section rewritten in its entirety.

One commentor, in addressing § 108.705, stated that many units, especially the self elevating type, are constructed without the circle E designation of the American Bureau of Shipping because this designation is voluntary. The commentor further stated that in such cases, the classification society will normally accept mooring and anchoring equipment of a size somewhat less than the sizes required by the classification rules, and requested that the Coast Guard do likewise. The Coast Guard feels that the requirements, as proposed, are the minimum requirements regardless of what classifications the unit is constructed to. The regulation is adopted as proposed.

Two commentors suggested that alternatives be provided to the proposed requirement for the Mining Enforcement Safety Administration approved first aid kit in § 108.707. As previously stated, the Coast Guard feels that the general equivalency class in § 108.105 makes adequate provision for the substitution of required equipment. One of the commentors also stated that the use of smaller kits should be allowed where accommodation spaces and work areas may be widely separated. The Coast Guard has no objection to the use of smaller approved kits which together would provide for the total number of persons on board.

PART 109—OPERATIONS

Seven commentors recommended the addition of a second sentence to § 109.107 to provide for the master or person in charge to take whatever action he may deem necessary in emergency conditions. The Coast Guard agrees that inclusion of a provision expressing the philosophy contained in the comment is desireable. Therefore, wording similar to that contained in other vessel inspection regulations has been added to § 109.109.

Ten commentors suggested modification of § 109.121(c) by the addition of the words "under normal and emergency conditions" at the end of this section to assure that all operating and emergency aspects are covered in the operating manual. The Coast Guard agrees and has modified § 109.121(c) as suggested.

Twenty-two commentors, in addressing § 109.203(b), pointed out that there is no "chief engineer" in the accepted marine understanding of that term on board many units to ensure the cleanliness of engineering spaces. This is true especially on those units which have no propulsion machinery. The Coast Guard agrees and has modified this section to place the responsibility on the master or person in charge if the unit does not have a "chief engineer" in its complement.

Twenty commentors suggested modification of § 109.205. The main point of the comments was that the Coast Guard does not have a legitimate interest in whether or not a unit's industrial machinery is operative. These comments have been accepted in part and the words "other than industrial machinery" have been added to this section. Coast Guard responsibility regarding "industrial machinery" is considered to be limited to the safety aspects of that machinery. The requirement to report *all* unsafe machinery is retained in § 109.419.

Eighteen commentors questioned the proposed requirements for testing of storage batteries for emergency lighting and power systems in § 109.211(c). Most of the commentors felt that the proposed duration of the tests was excessive. The Coast Guard agrees that the full 12 hour test would not be satisfactory since the battery would not be available for use at the end of the test. This section has been revised, specifying the testing interval as 6 months, and the test duration as two hours with the test results to be extrapolated to approximate the values that would result following a 12 hour test period. A short circuit breakdown test, suggested by some of the commentors, is not considered a suitable test of the battery capacity.

Eleven commentors suggested revision of § 109.215(c) stating that weekly launching of a lifeboat was impractical and could be dangerous particularly during recovery of the boat. The Coast Guard agrees in part with the commentors and has modified § 109.215(c) to read "weather permitting at least one lifeboat is partially lowered and its engine started and operated." Section § 109.217(a) has also been modified to ensure that the lowering of the lifeboat to the water, required by that section, is accomplished during one of the required boat drills. These changes are consistent with other vessel regulations.

Eleven commentors felt that the proposed requirement in § 109.323(b) for the person assigned to command a lifeboat or liferaft to have a list of the persons assigned seats in that survival craft was unreasonable. Most of these commentors felt that it should be the responsibility of each person to take their assigned seat. The Coast Guard feels that the person in charge of the lifeboat or liferaft should have a list indicating all persons assigned to his survival craft for the simple purpose of making a head count. However, this section has been modified so that the list may be by job titles or station bill numbers. This is considered reasonable due to the constant rotation of personnel aboard mobile offshore drilling units.

Seven commentors addressed the qualifications of persons assigned to command lifeboats or liferafts, and recommended the addition of "a qualified person designated by the master or person in charge" to the provisions of § 109.323(a). The Coast Guard does not agree and remains of the opinion that all persons assigned to command survival craft must be licensed deck officers, able seamen, or certified lifeboatmen.

Twenty commentors felt that the figure $1,500 as one of the criteria in § 109.411 for a reportable marine casualty was unrealistic. Nineteen of the

commentors felt that the figure $15,000.00 should be substituted, while one commentor suggested that the paragraph on property damage be deleted entirely. The Coast Guard is in partial agreement with the commentors in that the existing monetary figure is not realistic. The amount of $5,000.00 has been inserted into § 109.411(a)(1). The figure is consistent with a pending regulatory change that will affect other inspected vessels. A property damage figure is considered necessary to provide for analysis of casualties which may affect the unit and its personnel. Also, the damage might not be to the unit but to other property.

Section 109.411(a)(2) has been corrected by adding the words "or efficiency" after the word "seaworthiness" to conform with applicable statutes. Explanatory language has been added to more clearly indicate the types of incidents required to be reported.

Section 109.411(a)(5) has been revised in order to not exclude harbor workers who might suffer an incapacitating injury while on board a mobile offshore drilling unit. Though an incapacitating injury resulting from a unit casualty, or failure of unit equipment is currently reportable, it is intended that incapacitating injuries resulting from other causes be investigated. Also, personal injuries include not only those to harbor workers, but also those to subcontractors or visitors. Provisions concerning hospitalization have also been added.

Twenty commentors felt that the provisions of § 109.419 and § 109.121 should be limited to marine oriented machinery only. All commentors apparently felt that the Coast Guard's interest was limited to those instances which affect the safety and seaworthiness of the unit. This is not the case. Coast Guard responsibility also extends to the safety of personnel on the unit, regardless of whether they are engaged in industrial or marine related activities. The proposed regulation is therefore adopted without change.

Seven of the same commentors on the previous section suggested the addition of the words "on marine systems and components" to the title of § 109.423. The commentors apparently did not realize that this regulation is applicable only to required safety valve seals and that Coast Guard seals are required only on boilers. For clarification, the word "boiler" has been added to the first sentence of § 109.423(a).

A total of 13 commentors suggested numerous revisions to § 109.433. Most of the comments were apparently due to a lack of understanding of the proposed rules. The Coast Guard has rewritten this section to clarify "applicable" log entries, and to indicate when certain data on draft, load line marks, and appliances for watertight integrity must be logged.

Seventeen comments were received concerning § 109.437(i). They recommended that the records and original certificates, or certified copies of certificates, for loose gear, wire rope and the annealing of wrought iron gear be maintained by the owner for safekeeping rather than on the unit with the crane record book. This recommendation was not adopted since these records and certificates must be available to the Coast Guard inspector or certifying agency officials during any crane inspection. More important, they should be available to the unit's personnel for the identification of the tested gear. These documents can be kept on the unit with other records maintained for the cranes.

Those provisions of proposed § 109.437 relating to crane certificates has been placed in a new § 109.439 in order to separate the requirement to maintain a crane record book from the requirement of maintaining crane certificates.

One comment recommended that § 109.437(a)(2) be revised to provide for a load rating chart for each boom length which may be utilized. This is consistent with API RP 2D 2.1.3L and API Spec 2C 2.4, and the recommendation has been included.

Seventeen commentors felt that § 109.501 should be modified in view of the continuous movement of personnel on and off the unit and the regular presence of temporary personnel such as visitors and contractor's representatives. The Coast Guard agrees that some clarification is desirable regarding assignments of temporary personnel and visitors, and therefore has added a new paragraph to § 109.505. Section 109.501 is considered adequate and has not been changed.

Ten commentors were of the opinion that the references in § 109.557(b) regarding portable tanks were incorrect inasmuch as the Coast Guard had cancelled 46 CFR 98.30, and that the provisions of 49 CFR 170 to 189 are not applicable. The Coast Guard does not agree. 46 CFR 98.30 has not been cancelled, and certain portions of the reference regulations in 49 CFR are applicable to portable tanks. This section has, however, been revised to make the reference to 49 CFR more specific.

One commentor suggested that § 109.559(b) be deleted entirely since the referenced 46 CFR Part 147 does not provide for storage of explosives or radioactive materials as ships stores and supplies. The commentor is correct, and § 109.559(b) has been deleted. The Coast Guard is currently reviewing all of the ship stores regulations in 46 CFR 147, and will address this subject in a future Notice of Proposed Rulemaking.

Seven commentors felt that the provisions of § 109.573 would result in a duplication and overlapping regulatory requirements between the Coast Guard and the U.S. Geological Survey. The commentors referenced the provisions of USCGS, OCS Order No. 8 for the Gulf of Mexico which contain certain requirements for welding or burning operations on Federal Leases on the Outer Continental Shelf. The commentors suggested that the words "on marine systems and components" be added to the title of § 109.573. The Coast Guard feels that there is no conflict between *revised* OCS Order No. 8 and § 109.573. The Memorandum of Understanding addressing regulation of mobile offshore drilling units on the Outer Continental Shelf, signed by the Coast Guard and the U.S. Geologic Survey on 11 April 1977, addresses welding or burning operations in the following manner: The U.S.G.S. will exercise proper control of arc or acetylene welding or cutting during drilling operations (considering the possible gas hazards). The Coast Guard is responsible for standards for arc or acetylene welding or cutting operations affecting structural integrity or installed equipment. Also, Coast Guard regulations are applicable to a U.S. flag unit in any geographical location, while OCS Order No. 8 is applicable only on the Outer Continental Shelf of the United States.

Thirteen commentors suggested deletion of § 109.587. All of the commentors felt that there was no justifiable reason for this section which would prohibit the use of sleeping spaces below the main deck of a self-elevating unit while the unit is afloat.

The proposed § 109.587 was based on past capsizings of small self-elevating units where personnel were trapped below decks. The Coast Guard has considered the comments and feels that since these rules apply operating requirements to self-elevating units not previously subject to such requirements, this section as proposed is not necessary. Section 109.587 has therefore been deleted, and § 108.195 has been modified to address all types of units.

SUBCHAPTER F

Because of numerous comments received, the Coast Guard has added an equivalency section to Subart 58.60 for industrial systems on mobile offshore drilling units. This section is the same as § 108.105 in Subchapter I-A.

Eleven commentors recommended that a new section be added to the regulations at § 50.15-25 to read as follows:

"The standards of organizations listed or referenced to in this chapter

which are to be used in the design, material and fabrication of industrial systems are accepted without specific adoption provided the standards apply to the industrial use intended." The Coast Guard does not agree with the recommendation. Standards other than those specifically adopted must be reviewed by the Coast Guard to determine applicability for the service intended. This is considered necessary for maintenance of an acceptable level of safety.

Twenty-one commentors addressed the proposed revisions to § 54.01-16. In general, all of the commentors were of the opinion that the proposed regulation was unduly restrictive, would put excessive burdens on unit owners in obtaining acceptable equipment, and that the need for such a requirement was not indicated by past experience. The Coast Guard feels that the proposal was not fully understood by some of the commentors.

Section 54.01-16 as it presently exists provides for acceptance of ASME Code pressure vessels, other than those used for storage of compressed air (gas), for installation in industrial systems. Under the existing regulation, all industrial pressure vessels which contain compressed air (gas) are subject to full Coast Guard plan review and shop inspection. The proposal would eliminate Coast Guard plan review or shop inspection for any pressure vessel, except those of class I-L and II-L, installed in an industrial system. The regulation has been revised to clarify this point. Although several of the commentors suggested that the proposed Coast Guard requirements constitute a standard both independent and different from industry standards commonly used, the regulations are, in fact, based on the most widely accepted industrial consensus standard for pressure vessels, the ASME Code. Coast Guard regulations for pressure vessels, although patterned after the ASME Code requirements, have always provided for specific marine application of that general service code. Since ASME Code requirements do not include specific or complete consideration of product stored, pressure, and temperature, the requirements of 46 CFR Part 54 co-ordinate the specific application with the selection of design details, level and type of nondestructive testing, and heat treatment of welds. Since those Coast Guard requirements which may exceed the ASME Code for industrial pressure vessels represent typical owner-option alternatives under the Code, the requirements of § 54.01-16, as proposed, are not considered unduly restrictive, and are adopted.

Eleven commentors suggested that proposed § 56.01-1(c) be revised to indicate that piping for industrial systems need not fully comply with the requirements of Part 56 but must meet Subpart 58.60. Another commentor suggested that proposed § 56.01-1(c) be deleted in its entirety stating that Coast Guard regulation in this area is unnecessary. The Coast Guard agrees with the proposed revision of paragraph (c) and has modified it accordingly.

Regarding the suggestion to delete this subsection entirely, the Coast Guard is tasked with the responsiblity of ensuring that a minimum level of safety is maintained. To this end, the Coast Guard has adopted ANSI B31.3, API RP 53 and API RP 14C as the minimum requirements for industrial piping systems.

In addressing the provisions of § 56.50-50(d)(1), one commentor recommended that the Coast Guard give consideration to allowing the use of the average breadth (B) of a unit rather than the maximum breadth (B) when calculating the internal diameter of bilge suction pipes for triangular shaped units. The commentor submitted extensive data supporting the recommendation. After review of the submitted data, the Coast Guard agrees with the recommendation and has added a note 5 under § 56.50-50(d)(2) providing that for mobile offshore drilling units employing unusual hull forms, "B" may be modified to the average breadth rather than the maximum breadth.

Eleven commentors recommended that a new paragraph (f)(7) be added to § 56.50-50 to state that an emergency bilge suction is not required in multihulled and column stabilized mobile offshore drilling units where pump rooms are located below the water line if more than one pump also serves as a bilge pump through interconnecting piping or manifolding, and where a bilge suction is provided at each end of the pump room bilge. The Coast Guard does not agree. Emergency bilge suctions provide a last line of defense and are considered necessary. The multiple pumps and multiple bilge suctions are already required under existing regulations for bilge systems.

Eleven commentors felt that the note inserted below table 56.50-55(b)(1) should be deleted since there is no definition for a "machinery space" on any type of vessel.

This note was inadvertently misplaced in the Notice of Proposed Rulemaking and is applicable to § 56.50-50(f)(6), not to the table. The term "Machinery space," as used throughout Subchapter "F" generally refers to those spaces containing propulsion equipment, with the proposed clarification for mobile offshore drilling units included. The Coast Guard feels that the addition of a definition for this existing term is unnecessary.

Eleven commentors suggested, that for clarity, a new subparagraph § 56.50-55(a)(6)(i) be added stating that one of the required bilge pumps may be attached to a propelling engine in each hull. The Coast Guard agrees with the intent of the commentors and, in lieu of a new subparagraph, has added a second sentence to existing § 56.50-55(a)(3).

Eighteen commentors addressed § 58.60-1. One of the commentors recommended that entire Subpart 58.60 be deleted since self regulation of the industrial systems on mobile offshore drilling units has been eminently successful. Another commentor felt that Coast Guard involvement should be strictly limited to the high pressure piping of the mud and cement systems. The Coast Guard does not agree with these comments. The Coast Guard is required to oversee industrial systems from the safety aspect. It is considered necessary to prescribe regulations adequate to provide a level of safety equivalent to that which exists in other safety-sensitive systems aboard vessels. The proposed regulation is based on industry standards with modification to those standards where considered necessary. Nine commentors suggested that the words "shale shakers; desanders, and degassers" be deleted from § 58.60-1(b) since they are not industrial systems and are of no interest to the Coast Guard. The same commentors also suggested that § 58.60-1(c) be deleted since the oversight of blowout preventer control systems lies with the U.S. Geological Survey. The Coast Guard does not agree. Shale shakers, desanders, and degassers are components of the circulation system and meet the definition of industrial systems in § 107.111 in that they perform an industrial function. The Coast Guard's main area of interest regarding blowout preventer (BOP) control systems is in regard to safety of pressure vessels and pressure piping, and is not considered to be duplicative of that done by the U.S. Geological Survey which specifies the make-up and performance standards for BOP Systems on the Outer Continental Shelf of the United States.

Twenty commentors suggested major revisions to § 58.60-7. One of the commentors simply suggested that the reference to ANSI B 31.3 be deleted as not applicable. The other nineteen commentors recommended that the Coast Guard adopt ANSI B 31.4 and B 31.8 (pipeline standards) as well as any applicable American Petroleum Institute (API) requirements for industrial system piping. The same nineteen comments also suggested that the reference to API RP53 be deleted inas-

much as the oversight of blowout preventer control systems rests with the U.S. Geological Survey. The Coast Guard does not agree and the regulation has been adopted as proposed. ANSI B 31.4 and ANSI B 31.8 are intended for oil and gas transportation (pipeline) and are not considered applicable to industrial systems in the marine environment. The Coast Guard feels that B 31.3 will provide the required measure of safety that B 31.4 and B 31.8 do not provide. While B 31.3 is not written specifically for these systems, it will provide an adequate design standard for industrial piping systems. The Coast Guard interest in blowout preventer control systems has been already covered in addressing the comments on § 58.60-1(c).

Eleven commentors suggested that § 58.60-9 be revised inasmuch as API 14C was not intended for use with mobile offshore drilling units. All of the commentors agreed, however, that the principles of API 14C could be applied in conducting the proposed analysis. The Coast Guard agrees, and has rewritten § 58.60-9 to require that the industrial systems be designed and analyzed in accordance with the principles of API 14C.

Eighteen commentors recommended that the provision in § 58.60-11 for certification of the required analysis by a registered professional engineer be deleted, and that certification by the owner be allowed. The Coast Guard feels that an engineering review consistent with that employed for standard shipboard systems is necessary. Owner certification is not considered a suitable alternative for piping system design, but analysis and certification in conjunction with the engineer registration program should provide the required objectivity.

SUBCHAPTER J

Numerous commentors noted that the proposal made reference to certain parts of 46 CFR Subchapter J *Electrical Engineering Regulations* which could not be located in that subchapter. The proposal was drafted using the numbering from completely revised Subchapter J which was scheduled to be published in the FEDERAL REGISTER as a proposed rule simultaneously with proposed Subchapter I-A. However, the Subchapter J proposal was not published until June 27, 1977 (42 FR 3200) which was after most comments on Subchapter I-A had been submitted. Those portions of the Subchapter J proposal which addressed mobile offshore drilling units were the subject of considerable comment by the offshore industry. These comments have been evaluated and, simultaneously with this rulemaking, those amendments to the Electrical Engineering regulations which address mobile offshore drilling units are being published as amendments to the existing Subchapter J. All references contained in Subchapter I-A have been corrected.

Section 110.25-1(j) of the proposed rules has been changed to § 111.05-5(d)(22) for insertion in the existing rules. Three commentors indicated that plans showing the location of electrical equipment that is in hazardous locations should be required for all vessels with a fourth commentor suggesting the requirement should be applicable to LNG vessels. The Coast Guard agrees. The provision has been changed to require the plan to be submitted for all vessels carrying hazardous products in bulk. This requirement basically formalizes present policy.

One commentor suggested that all parts of the mud circulating system including open portions of the system downstream of the final degassing should be considered as Division 1 Locations. This suggestion was based on the premise that degassers cannot be assumed to be 100 percent efficient or working at all times. This point has been discussed with the oil industry at both a national and an international level. It is felt that the hazard downstream of the final degassing station is such as to justify a minimum safety classification of Division 2 spaces. It is pointed out that such spaces would be upgraded to Division 1 spaces if they do not have a good ventilation system under the requirements of § 111.92-3(c)(4).

One commentor suggested that loss of ventilation overpressure should automatically disconnect electrical power to nonessential equipment that is unsuitable for use in Division 1 areas. The Coast Guard agrees that nonessential equipment should not be located in a space that is a hazardous space. This is also contained in the proposed IMCO regulations for mobile offshore drilling units. This is inferred in Article 500-1 of the National Electrical Code referenced by § 111.105-5 of the proposed regulations and § 111.80-5(a)(4) of the existing rules. This intent has been clarified by adding a paragraph to include spaces made nonhazardous by means of ventilation.

One commentor felt that proposed § 111.105-33 provided a substantial relaxation from present policy in the areas that were considered Class I Division 1 locations. The present hazardous area classification requirements were based on API RP 500B, First edition. As more experience was gained in the operation of mobile offshore drilling units, the hazardous area classifications were changed to those appearing in API RP 500B Second edition published in 1973. This latter edition's guidelines basically parallel the requirements of these rules. The hazardous areas indicated in the proposed rules were contained in an early report of the IMCO Mobile Offshore Drilling Units Ad Hoc Group on Machinery and Electrical Installations. These guidelines have undergone some changes and are reflected in the rules as written. The evaluation of the classification of the various spaces on a mobile offshore drilling unit has been an international effort involving governmental agencies, the oil industry, and the classification societies. It is felt that the hazardous areas, as defined, present a realistic assessment of the flammable vapor hazard.

Two commentors felt that the industrial systems of a mobile offshore drilling unit should not be regulated and that the application of Subchapter J or the National Electrical Code, as provided, will preclude some present industry practices. One particular example is the contention that the amp capacity tables referenced in Subchapter J and those in the National Electrical Code would require increased conductor cross sections of up to three times current practice. The amp capacity tables contained in this Subchapter and those in the National Electrical Code represent the national standards for shipboard and industrial installations respectively and are applicable to mobile offshore drilling units. The Coast Guard and the Maritime Administration are presently funding a research project with the intent to produce a standard which would establish performance requirements. However, until this project is completed, it will be necessary to use one of the above national amp capacity tables.

One commentor questioned why the standard of safety was not the same for "industrial" systems as for "ship" systems. The NEC, coupled with the additional requirements of § 111.94-1, provide an acceptable level of safety for personnel and the unit. A failure of an industrial function means the mission of the unit will not be carried out whereas a failure of a steering gear, fire pump, bilge pump, etc could endanger the unit. This subpart, as written, provides for protection of the equipment operators and safety from fire, shock, or other injury associated with the electrical installation but not the additional redundancy and protection required for "ship" systems.

NAVIGATION AND VESSEL INSPECTION CIRCULAR

A total of eight commentors addressed the draft Navigation and Vessel Inspection Circular (NVC) which was discussed in the preamble to the proposed rule and referenced in

several sections of Part 107 of the proposal.

Several of the commentors questioned the legality of the references to the draft NVC, since the contents of the draft NVC were not included in the proposed rule. The draft NVC was made a part of the public rulemaking docket, therefore making it available to the public for comment. Thus, the requirements of the Administrative Procedures Act have been met. Under 5 U.S.C. 552(a) and 1 CFR Part 51, "matter reasonably available to the class of persons affected thereby is deemed published in the FEDERAL REGISTER when incorporated by reference therein . . ."

One of the commentors submitted an alternative draft of the NVC for consideration. The remaining commentors suggested minor revisions to various sections of the draft. Upon evaluation of the comments the Coast Guard feels that some portions of the draft NVC were not fully understood by the commentors. The NVC has been rewritten to clarify its application and highlight its intent to be as flexible as possible and still provide for an acceptable level of safety on all existing units. The Coast Guard also re-evaluated the draft NVC to determine the best method of presenting it in relation to the final rule on mobile offshore drilling units. As a result of this re-evaluation, the Coast Guard is, in addition to promulgating the document as an NVC, publishing the entire NVC as Appendix "A" to Subchapter I-A, ensuring its availability to all persons concerned.

Accordingly, Chapter I of Title 46 of the Code of Federal Regulations is amended as follows:

SUBCHAPTER F—MARINE ENGINEERING

PART 50—GENERAL PROVISIONS

1. By adding a new § 50.01-1(j) to read as follows:

§ 50.01-1 Authority for regulations.

* * * * *

(j) *Mobile offshore drilling units.* The citation regarding authority to prescribe requirements for mobile offshore units is in Subchapter IA of this chapter.

2. By adding a new § 50.05-1(e) to read as follows:

§ 50.05-1 General.

* * * * *

(e) Industrial systems and components on mobile offshore drilling units must meet § 54.01-16 and Subpart 58.60 of this chapter.

3. By adding a new § 50.05-10(b) to read as follows:

§ 50.05-10 Alterations or repairs.

* * * * *

(b) When alterations or repairs are made to a U.S. flag vessel in a port or place not in the United States, a notice containing details of the proposed alterations or repairs must be submitted to the appropriate Officer in Charge, Marine Inspection.

4. By revising § 50.05-15(a) to read as follows:

§ 50.05-15 Vessels subject to regulations in this subchapter.

(a) Passenger vessels, tank vessels, cargo and miscellaneous vessels, nuclear vessels, nautical schoolships, mobile offshore drilling units, and oceanographic vessels are subject to the regulations in this subchapter to the extent prescribed by various laws and regulations as described in § 50.01-1. The applicable provisions in this subchapter shall apply to all such U.S. flag vessels, and to all such foreign vessels which carry passengers from any port in the United States except as follows:

* * * * *

5. By adding a new § 50.15-20(a)(13) to read as follows:

§ 50.15-20 Additional standards.

(a) * * *

(13) American Petroleum Institute (API), 1201 L Street, Washington, D. C. 20037.

* * * * *

PART 54—PRESSURE VESSELS

6. By revising § 54.01-16 to read as follows:

§ 54.01-16 Mobile offshore drilling units: pressure vessels for industrial systems.

(a) A Class I, II, or III pressure vessel which is a component in an industrial system under Subpart 58.60 of this chapter is accepted by the Coast Guard for installation on a mobile offshore drilling unit if it meets the requirement of Table 54.01-5(b) in full, or if it—

(1) is stamped "U" under Section VIII of the ASME Code;

(2) meets the postweld heat treatment and the minimum joint and radiographic requirements of Table 54.01-5(b); and

(3) has pressure-relief devices that meet Subpart 54.15 of this chapter.

(b) Class I-L and II-L pressure vessels must meet the requirements of Table 54.01-5(b) in full and are not accepted under § 154.01-16.

PART 56—PIPING SYSTEMS AND APPURTENANCES

7. By revising § 56.01-1(c) to read as follows:

§ 56.01-1 Scope (replaces 100.0).

* * * * *

(c) Piping for industrial systems on mobile offshore drilling units need not fully comply with the requirements of this part but must meet Subpart 58.60 of this subchapter.

8. By adding a new paragraph (d-1) to follow paragraph (d) in § 56.01-10 to read as follows:

§ 56.01-10 Plan approval.

* * * * *

(d-1) Plans of piping for industrial systems on mobile offshore drilling units must be submitted under Subpart 58.60 of this subchapter.

* * * * *

9. By revising § 56.50-10(b) to read as follows:

§ 56.50-10 Special gaging requirements.

* * * * *

(b) Fuel oil service, fire, cargo and fuel oil transfer and boiler feed pumps must be provided with a pressure gage on the discharge side of the pump. Additional information pertaining to fire pumps is in § 34.10-5 of Subchapter D (Tank Vessels), § 76.10-5 of Subchapter H (Passenger Vessels), § 95.10-5 of Subchapter I (Cargo and Miscellaneous Vessels), and § 108.417 of Subchapter IA (Mobile Offshore Drilling Units) of this Chapter.

10. By revising § 56.50-15(h) to read as follows:

§ 56.50-15 Steam and exhaust piping.

* * * * *

(h) Steam piping with the exception of the steam heating system must not be led through passageways, accommodation spaces, or public spaces unless the arrangement is approved by the Commandant. Steam pressure for space heating must not exceed 45 pounds per square inch. High temperature hot water may be used for heating systems above this pressure, but not to exceed 375° F. Such systems should be designed as a complete unit and submitted for approval to the Commandant.

* * * * *

11. By revising § 56.50-50 (d) and (e) and adding new § 56.50-50(f) (5) and (6) to read as follows:

§ 56.50-50 Bilge and ballast piping.

* * * * * * *

(d) * * *

(1) For suctions to each main bilge pump:

$$d = 1 + \sqrt{\frac{L(B+D)}{2500}} \qquad (1)(4)(5)$$

(2) For branch suctions to cargo and machinery spaces:

$$d = 1 + \sqrt{\frac{c\ (B+D)}{1500}} \qquad (2)(3)(5)$$

where:

L=Length of vessel on loadwater line, in feet.
B=Breadth of vessel, in feet. (5)
D=Molded depth of bulkhead deck, in feet.
c=Length of compartment, in feet.
d=Required internal diameter of suction pipe, in inches.

NOTE 1.—For tankers "L" may be reduced by the combined length of the cargo oil tanks.

NOTE 2.—For bulk carriers with full depth wing tanks served by a ballast system where the beam of the vessel is not representative of the breadth of the compartment, "B" may be appropriately modified to the breadth of the compartment.

NOTE 3.—In the calculation for a vessel with more than one hull, such as a catamaran, the breadth of the unit is the breadth of one hull.

NOTE 4.—In the calculation for a mobile offshore drilling unit, "L" is reducible by the combined length of spaces that can be pumped by another piping system meeting §§ 56.50-50 and 56.50-55, where "L" is the length of the unit at the waterline.

NOTE 5.—For mobile offshore drilling units employing unusual hull forms, "B" may be modified to the average breadth rather than the maximum breadth.

* * * * * * *

(e) *Independent bilge suction.* One of the independent bilge pumps must have a suction of a diameter not less than that given by Formula (2) in paragraph (d) of this section that is led directly from the engine room bilge entirely independent of the bilge main, and on passenger vessels each independent bilge pump located in the machinery spaces must have such direct suctions from these spaces, except that not more than two pumps are required to have direct suctions from any one space. A suction that is led directly from a suitably located pump manifold may be considered to be independent of the bilge main. Where two direct suctions are required in any one compartment on passenger vessels, one suction must be located on each side of the compartment. If watertight bulkheads separate the engine and boiler rooms, a direct suction or suctions must be fitted to each compartment unless the pumps available for bilge service are distributed throughout these compartments, in which case at least one pump in each such compartment must be fitted with direct suction in its compartment. In a vessel with more than one hull, there must be one bilge pump that has an independent bilge suction in each hull. In a column stabilized mobile offshore drilling unit, the independent bilge suction must be from the pumproom bilge.

(f) * * *

(5) Each vessel with more than one hull must have an emergency bilge suction in each hull.

(6) Each column stabilized mobile offshore drilling unit must have—

(i) An emergency bilge suction in each hull; and

(ii) A remote control for the emergency pump and associated valves that can be operated from the ballast control room.

* * * * * * *

NOTE: For the purposes of this section, a pumproom is a machinery space on a column stabilized mobile offshore drilling unit.

12. By adding a fourth category of vessel to Table 56.50-55(a) to read as follows:

TABLE 56.50-55(a).—*Power Bilge Pumps Required for Self-Propelled Vessels*

Vessel length, in feet	* * *	Mobile offshore drilling units, all waters
180' or more	* * *	2
Below 180' and exceeding 65'	* * *	2
65' or less	* * *	2

* * * * * * *

13. By adding a fourth category of vessel to Table 56.50-55(b)(1) to read as follows:

TABLE 56.50-55(b)(1).—*Bilge Pumps Required for Nonself-Propelled Vessels*

Type of vessel	Waters navigated	Power pumps [1]	Hand pumps
* * * * * * *			
Mobile offshore drilling units	All waters	2	None
* * * * * * *			

14. By revising § 56.50-55(a)(3) and by adding a new § 56.50-55 (a)(6), (b)(3), and (e)(4) to read as follows:

§ 56.50-55 Bilge pumps.

(a) * * *

(3) One of the required power bilge pumps may be attached to the propelling engine. For vessels with more than one hull, one of the required bilge pumps in each hull may be attached to a propelling engine.

* * * * * * *

(6) Each hull of a vessel with more than one hull, such as a catamaran, must meet Table 56.50-55(a).

(b) * * *

(3) Each hull of a vessel with more than one hull, such as a catamaran, must meet Table 56.50-55(b).

* * * * * * *

(4) Each hull of a vessel with more than one hull must have at least two means for pumping the bilges in each hull. No multi-hulled vessel may operate unless one of these means is available to pump each bilge.

* * * * * * *

15. By adding a new § 56.50-90(d) to read as follows:

§ 56.50-90 Sounding devices.

* * * * * * *

(d) On mobile offshore drilling units where installation of sounding pipes may not be practicable for some tanks, alternate means of determining liquid level may be used if approved by the Commandant.

PART 58—MAIN AND AUXILIARY MACHINERY AND RELATED SYSTEMS

16. By adding a new § 58.03-35 to read as follows:

§ 58.03-35 American Petroleum Institute (API).

The standards of the American Petroleum Institute (API)[1] that are referred to in this part are hereby adopted.

17. By adding a new § 58.10-10 (c) and (d) to read as follows:

§ 58.10-10 Diesel engine installations.

* * * * *

(c) A diesel engine air intake on a mobile offshore drilling unit must not be in a classified location.[1]

(d) A diesel engine exhaust on a mobile offshore drilling unit must not discharge into a classified location.[1]

18. By adding a new § 58.10-15(c)(4) and revising § 58.10-15(d) to read as follows:

§ 58.10-15 Gas turbine installations.

* * * * *

(c) * * *

(4) A gas turbine exhaust on a mobile offshore drilling unit must not discharge in a classified location.[1]

(d) *Air inlets:* Air inlets must be designed as follows:

(1) Each air inlet must have means to protect the safety of life and to prevent the entrance of harmful foreign material, including water, into the system.

(2) A gas turbine air inlet must not be in a classified location.[1]

* * * * *

19. By adding a new Subpart 58.60 to read as follows:

Subpart 58.60—Industrial Systems and Components on Mobile Offshore Drilling Units (MODU)

Sec.

58.60-1 Applicability.
58.60-2 Alternatives and substitutions.
58.60-3 Pressure vessel.
58.60-5 Industrial systems: locations.
58.60-7 Industrial systems: piping.
58.60-9 Industrial systems: design.
58.60-11 Analyses, plans, diagrams and specification: submission.
58.60-13 Inspection.

§ 58.60-1 Applicability.

This subpart applies to the following industrial systems on board a mobile offshore drilling unit (MODU):

(a) Cementing systems.

(b) Circulation systems, including—

(1) Pipes and pumps for mud;

(2) Shale shakers;

(3) Desanders; and

(4) Degassers.

(c) Blow out preventor control systems.

(d) Riser and guideline tensioning systems.

(e) Motion compensation systems.

(f) Bulk material storage and handling systems.

(g) Other pressurized systems designed for the MODU's industrial operations.

§ 58.60-2 Alternatives and substitutions.

(a) The Coast Guard may accept substitutes for fittings, material, apparatus, equipment, arrangements, calculations, and tests required in this Subpart if the substitute provides an equivalent level of safety.

(b) In any case where it is shown to the satisfaction of the Commandant that the use of any particular equipment, apparatus, arrangment, or test is unreasonable or impracticable, the Commandant may permit the use of alternate equipment, apparatus, arrangement, or test to such an extent and upon such condition as will insure, to his satisfaction, a degree of safety consistent with the minimum standards set forth in this subpart.

§ 58.60-3 Pressure vessel.

A pressure vessel that is a component in an industrial system under this subpart must meet § 54.01-16.

§ 58.60-5 Industrial systems: locations.

An industrial system under this subpart must not be in a space that is—

(a) Concealed; or

(b) Inaccessible to industrial personnel.

§ 58.60-7 Industrial systems: piping.

The piping for industrial systems under this subpart must meet ANSI B31.3 (1977), with June 1978 addenda, except that blow out preventor control systems must also meet API RP 53, *Recommended Practice for Blowout Protection Equipment Systems, (1976).*

§ 58.60-9 Industrial systems: design.

Each system under this subpart must be designed and analyzed in accordance with the principles of API RP 14C, *Analysis, Design, Installation and Testing of Basic Surface Safety Systems on Offshore Production Platforms, (1978).*

§ 58.60-11 Analyses, plans, diagrams and specifications: submission.

(a) Each industrial system must be analyzed by a registered professional engineer to certify that the system has been designed in accordance with applicable standards.

(b) The certification must—

(1) Appear on all diagrams and analyses; and

(2) Be submitted under § 50.20-5 of this chapter.

(c) Standards or specifications for non-pressurized, mechanical or structural systems, and components such as derricks, drawworks, and rotary tables which comply with standards or specifications not referenced in this subchapter must be referenced on the plans or in the specifications of the unit.

§ 58.60-13 Inspection.

An industrial system is accepted by the Coast Guard if the inspector finds—

(a) The system meets this subpart;

(b) There are guards, shields, insulation or similar devices for protection of personnel; and

(c) The system is not manifestly unsafe.

PART 61—PERIODIC TESTS AND INSPECTIONS

20. By revising § 61.10-1(a) to read as follows:

§ 61.10-1 Scope.

(a) All pressure vessels aboard ships, mobile offshore drilling units, and barges are subject to periodic inspection.

* * * * *

21. By revising § 61.10-5(b) and (h)(1) to read as follows:

§ 61.10-5 Periodic inspections.

* * * * *

(b) *Internal and external examination and tests.* Pressure vessels that required initial shop inspection and pressure vessels that are accepted under § 54.01-16 which are fitted with manholes or other inspection openings, so they can be satisfactorily examined internally, must be opened biennially at the regular inspection for certification and thoroughly examined internally and externally. Such pressure vessels are not required to be hydrostatically tested unless defects are found, which in the marine inspector's opinion, may impair the safety of the pressure vessel. Where such defects are found, a hydrostatic test must be applied at a pressure equal to 1¼ times the maximum allowable working pressure.

* * * * *

(h) *Pneumatic tests.* (1) Pressure vessels which have been pneumatically tested during shop inspection must be thoroughly examined internally and externally biennially at the regular inspection for certification except in

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[1] See § 50.15-20(a)(13) for the address of API.

[1] Sections 108.171 to 108.175 of this Chapter define classified locations for mobile offshore drilling units.

[1] Sections 108.171 to 108.175 of this Chapter define classified locations for mobile offshore drilling units.

those instances where the inspection interval is prescribed otherwise, by the specific regulations applicable to the product carried, in Subchapter D (Tank Vessels), Subchapter I (Cargo and Miscellaneous Vessels), Subchapter IA (Mobile Offshore Drilling Units), or Subchapter N (Dangerous Cargoes) of this Chapter. For those tanks whose design precludes a thorough internal or external examination, the thickness must be determined by a nondestructive method acceptable to the Officer in Charge, Marine Inspection.

* * * * *

22. By adding a new § 61.20-15(b)(4) to read as follows:

§ 61.20-15 Tailshaft survey.

* * * * *

(b) * * *

(4) A mobile offshore drilling unit that has a tailshaft is not subject to specified periods for drawing the tailshaft if the tailshaft is—

(i) Drawn for inspection during regularly scheduled drydocking; or

(ii) Regularly inspected in a manner acceptable to the Commandant.

* * * * *

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23. By adding a new Subchapter I-A to read as follows:

SUBCHAPTER I-A—MOBILE OFFSHORE DRILLING UNITS

PART 107—INSPECTION AND CERTIFICATION

Subpart A—General

Sec.

107.01 Purpose of subchapter.
107.111 Definitions.
107.113 Industrial personnel.
107.115 Incorporation by reference.
107.117 Coast Guard addresses.

Subpart B—Inspection and Certification

107.201 Purpose.
107.211 Original Certificate of Inspection.
107.215 Biennial inspection for certification.
107.219 Permit to proceed to another port for repairs.
107.223 Temporary Certificate of Inspection: period in effect.
107.227 Certificate of Inspection Amendment.
107.231 Inspection for certification.
107.235 Servicing of hand portable fire extinguishers, semi-portable fire extinguishers and fixed fire-extinguishing systems.
107.239 Weight testing of lifeboats, lifeboat launching systems, and davit launched life raft systems.
107.243 Testing of winch electrical control apparatus for lifeboats.
107.251 Testing of the fire main.
107.257 Testing of fire hoses.
107.258 Crane certification.
107.259 Crane inspection and testing.
107.260 Rated load test for cranes.
107.261 Drydock or special examination.
107.265 Special examination in lieu of drydocking for column stabilized units or surface type units when specifically approved by the Commandant.
107.267 Special examination in lieu of drydocking for self-elevating units.
107.269 Reinspection.
107.271 Inspection: alterations.
107.275 Other inspections.
107.279 Certificate of Inspection: failure to meet requirements.

Subpart C—Plan Approval

107.301 Purpose.
107.305 Plans and information.
107.309 Crane plans and information.
107.317 Addresses for submittal of plans, specifications, and calculations.

Subpart D—Certificates Under International Convention for Safety of Life at Sea, 1960

107.401 Purpose and definition.
107.405 Safety Equipment Certificate.
107.409 Safety Construction Certificate.
107.413 Exemption certificate.

AUTHORITY: Sec. 2, 87 Stat. 418 (46 U.S.C. 86); sec. 3, 82 Stat. 341, as amended (46 U.S.C. 367); R.S. 4405, as amended (46 U.S.C. 375); sec. 10, 35 Stat. 428 (46 U.S.C. 395); R.S. 4423, as amended (46 U.S.C. 400); R.S. 4429, as amended (46 U.S.C. 407); R.S. 4430, as amended (46 U.S.C. 408); 88 Stat. 423 (46 U.S.C. 411); R.S. 4434, as amended (46 U.S.C. 412); R.S. 4462, as amended (46 U.S.C. 416); sec. 1, 73 Stat. 475 (46 U.S.C. 481); sec. 4, 67 Stat. 462 (43 U.S.C. 1333(d)); sec. 6(b)(1), 80 Stat. 937 (49 U.S.C. 1655(b)(1)); 49 CFR 1.46(b) and (n)(6).

Subpart A—General

§ 107.01 Purpose of subchapter.

This subchapter prescribes rules for the design, construction, equipment, inspection and operation of mobile offshore drilling units operating under the U.S. flag.

§ 107.111 Definitions.

As used in this subchapter:

"Approved" means approved by the Commandant.

"Column stabilized unit" means a unit with the main deck connected to the underwater hull of footings by columns or caissons.

"Commandant" means the Commandant of the Coast Guard or his authorized representative.

"District Commander" means an officer of the Coast Guard who commands a Coast Guard District described in 33 CFR Part 3 or his authorized representative.

"Headquarters" means Office of the Commandant, U.S. Coast Guard, Washington, D.C. 20590.

"Industrial systems and components" means any machinery or equipment except diving systems on board a mobile offshore drilling unit for use in the industrial function of the unit.

"International service" means operation of a mobile offshore drilling unit on an international voyage or in waters under the jurisdiction of foreign nations or the United Nations.

"Marine inspector" means any person designated by an Officer in Charge, Marine Inspection, as a marine inspector.

"Master" or "Person in charge" means a person designated under § 109.107.

"Mobile offshore drilling unit" or "unit" means a vessel, except a public vessel of the United States, capable of engaging in drilling operations for the exploration or exploitation of subsea resources that is—

(1) Seagoing and 300 or more gross tons and self-propelled by motor;

(2) Seagoing and 100 or more gross tons and non-self-propelled; or

(3) More than 65 feet in length and propelled by steam.

"Non-self-propelled unit" means a unit which is not self-propelled.

"Officer in Charge, Marine Inspection" means an officer of the Coast Guard who commands a Marine Inspection Zone described in 33 CFR Part 3 or his authorized representative.

"Self-elevating unit" means a unit with moveable legs capable of raising its hull above the surface of the sea.

"Self-propelled unit" means a unit that has propulsion machinery that provides for independent underway navigation.

"Surface type unit" means a unit with a ship shape or barge type displacement hull of single or multiple hull construction intended for operation in the floating condition.

"Watertight" means designed and constructed to withstand a static head of water without any leakage, except that "watertight equipment" means enclosed equipment so constructed that a stream of water from a hose (not less than 1 inch in diameter) under head of about 35 feet from a distance of about 10 feet, and for a period of 5 minutes, can be played on the apparatus without leakage.

"Weathertight" means that water will not penetrate into the unit in any sea condition, except that "weathertight equipment" means equipment so constructed or protected that exposure to a beating rain will not result in the entrance of water.

§ 107.113 Industrial personnel.

Industrial personnel are all persons, exclusive of the required crew as set forth in the Certificate of Inspection, carried on board a mobile offshore drilling unit for the sole purpose of carrying out the industrial business or functions of the unit.

§ 107.115 Incorporation by reference.

(a) The standards referred to in this subchapter are incorporated by reference. The incorporation by reference was approved by the Director of the Federal Register under the provisions of 1 CFR Part 51 on November 7, 1978.

(b) The standards are on file in the FEDERAL REGISTER library and are available from the appropriate organizations whose addresses are listed below:

(1) American Bureau of Shipping, 45 Broad Street, New York, New York 10004.
(2) American National Standards Institute Standards (ANSIS), American Society of Mechanical Engineers, 345 East 47th Street, New York, New York 10017.
(3) American Petroleum Institute, 2101 L Street, N.W., Washington, D.C. 20037.
(4) International Cargo Gear Bureau, 17 Battery Place, New York, New York 10004.
(5) National Fire Protection Association, 470 Atlantic Avenue, Boston, Massachusetts 02210.
(6) Underwriters Laboratory, 333 Pfingsten Road, Northbrook, Illinois 60062.

§ 107.117 Coast Guard addresses.

When approval of the Commandant is required under this Subchapter, the following addresses are to be used:

(a) For approval by Commandant (G-MVI)—

Commandant (G-MVI/83), U.S. Coast Guard, Washington, D.C. 20590.

(b) For approval by Commandant (G-MMT)—

Commandant (G-MMT/82), U.S. Coast Guard, Washington, D.C. 20590.

Subpart B—Inspection and Certification

§ 107.201 Purpose.

This subpart prescribes rules for the—

(a) Original inspection and issuance of an original Certificate of Inspection required by 46 U.S.C. 367, 391, 395, and 399;

(b) Biennial inspection for certification and renewal of a Certificate of Inspection required by 46 U.S.C. 367, 391, 395, and 399;

(c) Reinspection required by 46 U.S.C. 435;

(d) Inspection after an accident required by 46 U.S.C. 435; and

(e) Inspection of repairs or alterations, or both, required by 46 U.S.C. 435;

(f) Amendments to Certificates of Inspection;

(g) Issuance of Temporary Certificate of Inspection; and

(h) Issuance of Permit to Proceed to Another Port for Repairs.

§ 107.211 Original Certificate of Inspection.

(a) The owner or builder of a unit applies for an inspection for an original Certificate of Inspection by submitting before construction is started—

(1) a completed Application for Inspection of U.S. Vessel, Form CG-3752, to the Officer in Charge, Marine Inspection, of the marine inspection zone in which the unit is to be constructed; and

(2) plans and information indicating the proposed arrangement and construction of the unit to the Coast Guard in accordance with Subpart C of this Part.

(b) An original Certificate of Inspection is issued if the Coast Guard finds, during the inspections conducted while the unit is being constructed, that a unit contracted for on or after January 3, 1979 meets § 107.231.

(c) An original Certificate of Inspection is issued if the Coast Guard finds that an uncertificated unit contracted for before January 3, 1979 meets the applicable requirements of this Subchapter as specified in the Navigation and Vessel Inspection Circular, *"Inspection and Certification of Existing Mobile Offshore Drilling Units"* (Appendix A). Existing structure, arrangements, materials, equipment, and facilities will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Repairs and minor alterations may be made to the same standards as originally used. Major alterations and conversions shall be in compliance with the provisions of each subpart of this part to the satisfaction of the Officer in Charge, Marine Inspection.

(d) A Certificate of Inspection expires 24 months after the date of issue.

§ 107.215 Biennial inspection for certification.

(a) The master, owner, or agent of a certificated unit may apply for a biennial inspection for the renewal of a Certificate of Inspection by submitting a completed Application for Inspection of U.S. Vessel, Form CG-3752, to the Officer in Charge, Marine Inspection, in or nearest to the port where the inspection will be made.

(b) The master, owner, or agent of a certificated unit operating in international service may apply for renewal of a Certificate of Inspection by submitting a completed Application for Inspection of U.S. Vessel Form CG-3752, to the appropriate Officer in Charge, Marine Inspection, at least 60 days before the expiration date that appears on the unit's unexpired Certificate of Inspection.

(c) A Certificate of Inspection is renewed if the Coast Guard finds, during the biennial inspection, that—

(1) A unit contracted for on or after January 3, 1979 meets the requirements of this Subchapter; or

(2) A unit contracted for before January 3 1979, and issued a Certificate of Inspection under Subchapter I of this Chapter, continues to meet the requirements of that subchapter and meets the applicable requirements of this subchapter as specified in Navigation and Vessel Inspection Circular, *"Inspection and Certification of Existing Mobile Offshore Drilling Units"* (Appendix A).

§ 107.219 Permit to proceed to another port for repairs.

(a) If a unit fails to meet the requirements in § 107.231, and the Coast Guard withholds reissuance of a Certificate of Inspection, or suspends an unexpired Certificate of Inspection, as described in § 107.279, a Permit to Proceed to Another Port for Repairs (Form CG-948) is issued by the Coast Guard if—

(1) The owner, master, person in charge, or agent makes a written request for a permit to the Officer in Charge, Marine Inspection, that includes—

(i) The reason the permit is requested;

(ii) The port in which the repairs are to be made; and

(iii) The period of time for the voyage;

(2) The Officer in Charge, Marine Inspection finds that the unit is seaworthy for the voyage.

(b) A Permit to Proceed to Another Port for Repairs states the conditions under which it was issued and is in force for the period of the voyage to the port in which the repairs are to be made.

§ 107.223 Temporary Certificate of Inspection: period in effect.

A Temporary Certificate of Inspection, issued under 46 U.S.C. 399, is effective until a Certificate of Inspection is issued to the unit.

§ 107.227 Certificate of Inspection Amendment.

The Coast Guard issues a Certificate of Inspection Amendment, Form CG-858, to a certificated unit if a requirement for equipment and data listed on the unexpired Certificate of Inspection is changed.

§ 107.231 Inspection for certification.

A unit is issued a Certificate of Inspection under § 107.211 or § 107.215(c) if the inspector finds the following:

(a) The unit and its equipment comply with—

(1) Part 108 of this subchapter;

(2) Subchapter J of this chapter, Electrical Engineering;[1]

[1] Requirements for industrial systems and components are in Subpart 111.94 of this Chapter.

(3) Subchapter F of this chapter, Marine Engineering;[2]
(4) Subchapter E of this chapter, Load Lines;[3]
(5) Part 64 or Part 98 of this chapter, or both, if the unit carries marine protable tanks or portable tanks;
(6) The vessel design and equipment requirements of the oil pollution regulations (33 CFR Part 155, Subpart B);
(7) The Rules of the Road requirements for the waters in which the unit navigates, contained in—
(i) 33 U.S.C. Chapters 3, 4, 5, or 21; and
(ii) 33 CFR Parts 80, 85, 9r 86.

LIFESAVING EQUIPMENT

(b) Each lifeboat and its equipment are serviceable.
(c) Each lifeboat, each lifeboat launching system, and each davit launched liferaft launching system passes the test in § 107.239.
(d) Each winch electrical control apparatus for lifeboats meets the testing requirements in § 107.243.
(e) Each inflatable liferaft is serviceable and meets the servicing requirement in § 160.051-6 of this chapter.
(f) Each hydraulic release for inflatable liferafts meets the periodic servicing and testing requirements in § 160.062-4 of this chapter.
(g) Each life preserver is serviceable.
(h) A life preserver that is cleaned or repaired meets Subpart 160.006 of this chapter.
(i) Each buoyant work vest is serviceable.

FIRE FIGHTING EQUIPMENT

(j) Each hand portable fire extinguisher and each semiportable fire extinguisher is inspected, and serviced if required, in accordance with § 107.235(a).
(k) Each fixed fire-extinguishing system is inspected, and serviced if required, in accordance with § 107.235(b).
(l) Each fire main system meets the testing requirements in § 107.251.
(m) Each fire hose meets the testing requirements in § 107.257.

CRANES

(n) The rated load test for cranes in § 107.260 is met.
(o) Each crane is inspected and tested in accordance with § 107.258.

MISCELLANEOUS

(p) Each watertight door is operative.
(q) Each valve with a remote control is operative.
(r) Each means of escape on the unit is safe for the intended service.
(s) There is not an accumulation of oil which might create a fire hazard on tank tops, decks, in drip pans, machinery spaces, and pumproom bilges.
(t) Each accommodation space is sanitary.
(u) The unit meet the drydocking requirement in § 107.261 or the special examination in § 107.265.
(v) The unit meets the equipment and data information requirements on its certificate of inspection.
(w) Each record in Subpart D of part 109 is maintained as prescribed.
(x) A unit that engages on international voyages has on board the appropriate certificates issued under 47 U.S.C. 360:
(1) Safety Radiotelegraph Certificate or Safety Radiotelephony Certificate.
(2) Exemption Certificate, if an exemption has been granted.

INSTALLATION TESTS

(y) Each lifeboat, lifeboat davit, lifeboat winch, liferaft davit, and liferaft winch meets the installation tests in § 94.35-5(b) of this chapter.
(z) Each davit launched liferaft meets the installation test in § 95.37-5 of this chapter.
(aa) Piping for each carbon dioxide extinguishing system meets the installation test in § 108.449 of this chapter.
(bb) Each sliding watertight door meets the installation tests in § 163.001-6(b) of this chapter.

OTHER TESTS AND INSPECTIONS

(cc) The unit and its equipment meet any other test or inspection deemed necessary by the inspector to determine if they are suitable for the service in which they are to be employed.

§ 107.235 Servicing of hand portable fire extinguishers, semi-portable fire extinguishers and fixed fire-extinguishing systems.

(a) Each hand portable fire extinguisher and each semi-portable fire extinguisher on board the unit must be serviced as setout in Table 107.235 and examined for excessive corrosion and general condition.

TABLE 107.235

Type extinguisher	Test and servicing required
Soda Acid	Discharge, clean hose and inside of extinguisher thoroughly. Recharge.
Foam	Discharge, clean hose and inside of extinguisher thoroughly. Recharge.
Pump Tank (water or antifreeze)	Discharge, clean hose and inside of extinguisher thoroughly. Recharge with clean water or antifreeze.
Cartridge operated (water, antifreeze or loaded stream).	Examine pressure cartridge and replace if end is punctured or if cartridge is otherwise determined to have leaked or to be in unsuitable condition. Remove liquid, clean hose and inside of extinguisher thoroughly. Recharge with clean water, solution, or antifreeze. Insert charged cartridge.
Carbon Dioxide	Weigh cyclinders. Recharge if weight loss exceeds 10 percent. Inspect hose and nozzle to be sure they are clear.
Dry chemical (cartridge-operated type)	Examine pressure cartridge and replace if end is punctured or if cartridge is otherwise determined to have leaked or to be in unsuitable condition. Inspect hose and nozzle to see if they are clear. Insert charged cartridge. Be sure dry chemical is free-flowing (not caked) and chamber contains full charge.
Dry chemical (stored pressure type)	See that pressure gage is in operating range. If not, or if seal is broken, weigh or otherwise determine that full charge of dry chemical is in extinguisher. Recharge if pressure is low or if dry chemical is needed.

(b) Each fixed fire-extinguishing system must be examined for excessive corrosion and general condition and be serviced by—
(1) Recharging the cylinders of each carbon dioxide system, if the weight loss is more than 10% of the weight of the charge;
(2) Testing each foam system, except premix systems by—
(i) Discharging foam for approximately 15 seconds from a nozzle designated by the marine inspector;
(ii) Discharging water from all other lines and nozzles; and
(iii) Taking a sample of the foam liquid and submitting it to the manufacturer or his authorized representative for determination of its specific gravity, PH, percentage of water dilution, and solid content, and certification as a suitable firefighing foam;

[2]Requirements for industrial systems and components are in Subpart 58.60 of this Chapter.
[3]Requirements for load lines are not applicable to bottom supported units when they are being supported by, or being lowered to or raised from the seabed.

(3) Removing the pressure cartridge of each premix aqueous film forming foam system and replacing the cartridge if the seal is punctured, sampling the premix solution in accordance with the manufacturer's instructions, and replacing cylinders that are discharged.

NOTE.—All carbon dioxide cylinders and discharge hoses of semi-portable carbon dioxide systems must be tested and marked in accordance with § 147.04-1 of this Chapter.

§ 107.239 Weight testing of lifeboats, lifeboat launching systems, and davit launched liferaft systems.

(a) Each lifeboat must be loaded to the deadweight equivalent of the allowed capacity, lowered, stopped using the winch brake during descent, lowered into the water by releasing the winch brake, and released from the falls;

(b) The davit and winch for each davit launched liferaft must be tested by suspending a test weight from the releasing hook and lowering the weight to near the water;

(c) The automatic disengaging device for each davit launched liferaft must be tested by a spring weight to assure the applied force at which the hook will release is within the design specification; and

(d) The launching equipment for each lifeboat or davit launched liferaft must be tested with a weight equal to the weight of the lifeboat or raft plus the full complement of persons and equipment.

NOTE.—In making these tests, deadweight is equivalent to 165 pounds for each person in the allowed capacity.

§ 107.243 Testing of winch electrical control apparatus for lifeboats.

Each winch electrical control apparatus for lifeboats must be opened and inspected. When the inspection is completed the control apparatus must be operated.

107.251 Testing of the fire main.

Each fire main system must be opened and the pressure checked at—

(a) The most remote outlet; and

(b) The highest outlet.

§ 107.257 Testing of fire hose.

Each fire hose must be subjected to a test pressure equivalent to the maximum pressure to which it may be subjected during operation. However, each fire hose must be subjected to a pressure of at least 100 p.s.i.

§ 107.258 Crane certification.

(a) The Coast Guard may accept current certificates issued by approved organizations as evidence of condition and suitability of cranes. The following organizations are approved by the Coast Guard as crane certifying authorities:

(1) American Bureau of Shipping, 45 Broad St., New York, N.Y., 10004.

(2) International Cargo Gear Bureau, Inc., 17 Battery Place, New York, N.Y. 10004.

(b) Crane certification must be based upon—

(1) A review of plans submitted under § 107.309; and

(2) The continuing program of tests and inspections in § 107.259.

(c) Each load test and inspection by the certifying authority must be recorded in the unit's Crane Record Book required in § 109.437.

§ 107.259 Crane inspection, and testing.

(a) Each crane must be inspected and tested in accordance with Section 3 of the American Petroleum Institute (A.P.I.) *Recommended Practice for Operation and Maintenance of Offshore Cranes,* API RP 2D, First Edition (October 1972) with supplement 1, except that the rated load test must be performed in accordance with § 107.260.

(b) The tests are witnessed and the inspections are conducted by—

(1) A Coast Guard marine inspector; or

(2) The American Bureau of Shipping (A.B.S.), or the International Cargo Gear Bureau, Inc. (I.C.G.B.) for cranes under certification by these organizations.

(c) If the tests and inspections are conducted by the A.B.S. or the I.C.G.B., the surveyor shall certify that the tests and inspections were conducted in accordance with the A.P.I. specification; or modified by § 107.260.

§ 107.260 Rated load test for cranes.

(a) To meet the requirements in § 107.231(n), each crane must meet the following rated load test at both the maximum and minimum boom angles usually employed in material transfers over the side of the unit:

Rated load of assembled gear	Proof load
Less than or equal to 20 tons.	25 pct in excess.
Greater than 20 tons but less than or equal to 50 tons.	5 tons in excess.
Greater than 50 tons	10 pct in excess.

(b) The weight of the hook, hook blocks, slings, rib, and other rigging, except the hoist rope, must be considered part of the load for the rated load test.

(c) The rated load test must be performed—

(1) When the crane is installed;

(2) Each 48 months; and

(3) After repairs or alterations to any structural component of the crane.

§ 107.261 Drydock or special examination.

(a) Except as provided in paragraphs (b), (c), and (d), each unit must be drydocked in the presence of a Coast Guard inspector at least once during each 24 month period after it is issued a Certificate of Inspection.

(b) If a unit is column-stabilized, it may be specially examined in lieu of drydocking in accordance with § 107.265 in the presence of a Coast Guard inspector.

(c) If a unit is self-elevating, it may be specially examined in lieu of drydocking in accordance with § 107.267 in the presence of a Coast Guard inspector.

(d) If a unit is a surface type, it may be specially examined in lieu of drydocking in accordance with § 107.265 in the presence of a Coast Guard inspector if the examination is specifically approved by the Commandant.

(e) The master, person in charge, owner, or agent of a certificated unit must notify the appropriate Officer in Charge, Marine Inspection before the unit is drydocked, or specially examined.

(f) The master, person in charge, owner, or agent of a certificated unit operating in international service must notify the appropriate Officer in Charge, Marine Inspection at least 60 days before the unit is drydocked or specially examined under § 107.265 or § 107.267.

§ 107.265 Special examination in lieu of drydocking for column stabilized units or surface type units when specifically approved by the Commandant.

(a) A column stabilized unit, or surface type unit when approved by the Commandant, must be specially examined in accordance with a plan—

(1) Submitted in accordance with paragraph (b); and

(2) Accepted by the Commandant (G-MVI).

(b) To meet the requirements in paragraph (a), the owner or operator of the unit must submit a plan to the Coast Guard that provides the methods used to determine the condition of the hull and that contains the following information:

(1) The planned location where the unit is to be examined.

(2) The draft at which the unit is to be examined.

(3) The names of the diver or diving company selected for the examination.

(4) The method of visual presentation for the examination.

(5) The method used to clean the underwater portion of the hull.

(6) The method and location of gauging the underwater portion of the hull.

(7) The number of underwater hull fittings and number of compartments to be opened.

(8) The underwater high stress areas and the welds in those areas to be examined.

§ 107.267 Special examination in lieu of drydocking for self-elevating units.

(a) A self-elevating unit must be specially examined in accordance with a plan—

(1) Submitted in accordance with paragraph (b); and

(2) Approved by the Commandant (G-MVI).

(b) To meet the requirements in paragraph (a), the owner or operator of the unit must submit a plan to the Commandant (G-MVI) that provides for—

(1) Examination of the unit's hull while it is in the elevated position; and

(2) Examination of the supporting mat, spud cans, or footings while the unit is afloat.

(c) The plan required in paragraph (b) must contain the following information:

(1) The planned location where the unit is to be examined.

(2) The methods to be used to conduct the hull examination.

(3) The method of visual presentation for examination of the underwater components.

(4) The methods of determining the condition of the underwater components.

(5) The underwater high stress areas and the welds in those areas that are to be examined.

(6) The names of the diver or diving company selected for the examination.

§ 107.269 Reinspection.

The Coast Guard reinspects a unit within the period between the 10th and 14th months after the month in which the certificate is issued to determine if the unit meets the requirements in § 107.231, except § 107.231(y), (z), (aa), and (bb).

§ 107.271 Inspection: alterations.

After plans are approved for alterations affecting the safety of the unit the Coast Guard conducts inspections of the affected—

(a) Hull;

(b) Machinery; or

(c) Equipment.

§ 107.275 Other inspections.

When the Coast Guard receives the report required in § 109.411 or § 109.425, the Coast Guard conducts the following inspections of a unit to determine if the unit meets the requirements under which it was issued its original Certificate of Inspection:

(a) An inspection after an accident.

(b) An inspection after a defect is found that affects—

(1) The seaworthiness of the unit; or

(2) The safety or efficiency of a life-saving device, or firefighting device.

(c) An inspection of repairs made because of an accident or a defect.

§ 107.279 Certificate of Inspection: failure to meet requirements.

If a unit fails to meet the requirements in § 107.231, the Coast Guard may—

(a) Withhold issuance of an original Certificate of Inspection after an original inspection for certification, until the unit meets the requirements in § 107.231;

(b) Withhold renewal of a Certificate of Inspection after a biennial inspection for certification until the unit meets the requirements in § 107.231, except § 107.231(y), (z), (aa), and (bb);

(c) Suspend an unexpired Certificate of Inspection after a reinspection, until the unit meets the requirements in § 107.231, except § 107.231(y), (z), (aa), and (bb);

(d) Revoke an unexpired Certificate of Inspection after a reinspection if the unit operates without complying with Coast Guard orders to correct unlawful conditions;

(e) Revoke or suspend an unexpired Certificate of Inspection;

(f) Withhold issuance of a safety equipment certificate;

(g) Withhold renewal of safety equipment certificate;

(h) Suspend an unexpired safety equipment certificate;

(i) Revoke an unexpired safety equipment certificate; and

(j) Withhold, suspend, or revoke an exemption certificate.

Subpart C—Plan Approval

§ 107.301 Purpose.

This subpart prescribes procedures for submitting plans and specifications for plan approval and describes the information that must be submitted.

§ 107.305 Plans and information.

Each applicant for approval of plans must submit three copies of each of the following described plans, specifications, and structural calculations concerning the construction, arrangement, required equipment, and safety features of the unit:

GENERAL

(a) Specifications.

(b) General arrangement plan of decks, holds, inner bottoms, etc. including inboard and outboard profile.

HULL STRUCTURE[1]

(c) *Inner bottom plating and framing.

(d) *Midship section.

(e) *Shell plating and framing.

(f) *Stern, stern frame, and rudder.

(g) *Structural deck plans for strength decks.

(h) *Pillars and girders.

(i) *Watertight and oiltight bulkheads.

(j) *Foundations for main machinery and boilers.

(k) *Arrangement of ports, doors, and airports in shell plating.

(l) *Hatch coamings and covers in weather and watertight decks.

(m) *Details of watertight doors and operating gear.

(n) *Scuppers and drains penetrating shell plating.

(o) Arrangement of cranes.

(p) For self-elevating units, column stabilized units, and units with special hull configuration, structural calculations and plans showing special structural features.

STABILITY

(q) Lines.

(r) Curves of form and cross curves of stability.

(s) Capacity plan showing capacities and vertical, longitudinal, and transverse centers of gravity of stowage spaces.

(t) Tank sounding tables.

(u) Draft mark locations.

(u-1) Intact stability and damage stability data.

FIRE CONTROL

(v) General arrangement plans showing, for each deck, the control stations, fire sections enclosed by fire resisting bulkheads, alarm and extinguishing systems, fire extinguishers, means of access to compartments and other decks, and the ventilation system, including location of ventilation shut downs, positions of dampers, and the numbers identifying each system.

(w) Ventilation diagram, including dampers and other fire control features.

(x) Details of fire alarm systems.

(y) Details of fixed fire extinguishing systems.

MARINE ENGINEERING

(z) Plans required for marine engineering equipment and systems by Subchapter F of this chapter.

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[1] The asterisk (*) indicates items that are approved by the American Bureau of Shipping for vessels classed by it. Items approved by the American Bureau of Shipping are generally accepted as satisfactory unless the law or Coast Guard regulations contain requirements that are not covered by the American Bureau of Shipping.

ELECTRICAL ENGINEERING

(aa) Plans required for electrical engineering equipment and systems by Subchapter J of this chapter.

LIFE SAVING EQUIPMENT

(bb) The location and arrangement of each life saving system including each embarkation deck, showing each overboard discharge, and projections in the way of launching lifeboats and liferafts.

(cc) The weight of each lifeboat when fully equipped and loaded.

(dd) Working loads of davits and winches.

(ee) Types and sizes of falls.

(ff) Manufacturer's name and identification of each item of equipment.

PERSONNEL ACCOMMODATIONS

(gg) Arrangement plans showing each accommodation space, ventilation, and means of escape.

CONSTRUCTION PORTFOLIO [2]

(hh) A construction portfolio must be prepared for each unit and must be approved by the Coast Guard. The portfolio must document the location and extent of application of different grades and strengths of materials and include a description of the materials and welding procedures employed and any other relevant construction information. The portfolio must contain the following:

(1) Structural plans showing areas incorporating different grades and strengths of materials. A simplified plan may be included in the portfolio if it adequately defines the different areas of application.

(2) A list of different grades or strengths of material that conform to American Bureau of Shipping (ABS) or American Society of Testing and Materials (ASTM) specifications. For materials that do not conform to ABS or ASTM specifications, complete specifications, including chemical and physical properties, special testing and any heat treatment.

(3) Each approved weld procedure for the fabrication of each structure using different grades or strengthen of material and each approved weld test procedure.

(4) Information, restrictions or prohibitions regarding repairs or modifications.

OPERATING MANUAL

(ii) The operating manual required in § 109.121.

§ 107.309 Crane plans and information.

(a) Three copies of each of the following must be submitted:

(1) Stress and arrangement diagrams, bill of materials, and supporting calculations for all structural components listed in API Spec. 2C, Second Edition, February 1972 (with supplement 2).

(2) Drawings of foundations and substructures with supporting calculations for support and stability of each crane under its rated load.

(3) Plans showing the installation of the safety features required in § 108.601.

(4) Drawings of the means provided to stop motion and set brakes during a power failure.

NOTE.—These plans must be submitted to the Coast Guard, if the crane is not certified. If the crane is to be certified, four copies must be sent to the American Bureau of Shipping or the International Cargo Gear Bureau.

(b) In addition to the plans and information required in paragraph (a), the following plans and information must be submitted to the Coast Guard only:

(1) One line diagrams of the electrical power circuits of the electric power crane overload protection required in Subpart 111.50 of this chapter.

(2) Diagrams of the hydraulic or pneumatic power and control systems, as required by Subpart 58.30-40 or 58.30-50 of this Chapter, as applicable.

§ 107.317 Addresses for submittal of plans, specifications, and calculations.

The copies of each plan, specification, and calculation required under § 107.305 and § 107.309 must be submitted to one of the following as applicable:

(a) The Officer in Charge, Marine Inspection, in the zone in which the unit is to be built or altered.

(b) One of the following field technical offices:

(1) Commander(mmt), 3rd Coast Guard District, Governors Island, New York, NY 10004, for the geographical area covered by the 1st and 3rd Coast Guard Districts.

(2) Commander(mmt), 5th Coast Guard District, Federal Bldg., 431 Crawford St., Portsmouth, VA 23705.

(3) Commander(mmt), 8th Coast Guard District, Hale Boggs Federal Building, 500 Camp Street, New Orleans, LA 70130, for the geographical area covered by the 2nd, 7th, and 8th Coast Guard District.

(4) Commander(mmt), 9th Coast Guard District, 1240 East 9th St., Cleveland, OH 44199.

(5) Commander(mmt), 12th Coast Guard District, 630 Sansome St., San Francisco, CA 94126, for the geographical area covered by the 11th, 12th, 13th, 14th, and 17th Coast Guard Districts.

(c) The American Bureau of Shipping, (ABS) 45 Broad St., New York, NY 10004.

NOTE.—For classed vessels, the American Bureau of Shipping will, upon request by the submitter, arrange to forward the plans indicated with an asterisk in § 107.305 to the Coast Guard indicating ABS's action thereon.

(d) International Cargo Gear Bureau, Inc., 17 Battery Place, New York, NY 10004.

Subpart D—Certificates Under International Convention for Safety of Life at Sea, 1960

§ 107.401 Purpose and definition.

(a) The International Convention for Safety of Life at Sea, 1960, requires one or more of the certificates described in this subpart to be carried on self-propelled vessels of 500 gross tons or over engaged in international voyages. This subpart prescribes rules for the issuance of these certificates to mobile offshore drilling units.

(b) "International voyage" has the same meaning as stated in Regulation 2(d) of Part A, Chapter I in the *International Convention for the Safety of Life at Sea, 1960,* June 17, 1960, 16 UST 185, TIAS 5780, 536 UNTS 27 (SOLAS 60), which is: "a voyage from a country to which the present Convention applies to a port outside such country, or conversely; and for this purpose every territory for the international relations of which a Contracting Government is responsible or for which the United Nations are the administering authority is regarded as a separate country." The Coast Guard has interpreted this definition to include the following:

(1) A voyage from a country to which SOLAS 60 applies, to a port outside that country or the reverse;

(2) A voyage from any territory, including the Commonwealth of Puerto Rico, the Canal Zone, all possessions of the United States, and all lands held by the United States, and all lands held by the United States under a protectorate or mandate, whose international relations are the responsibility of a contracting SOLAS 60 government, or which is administered by the United Nations, to a port outside that territory or the reverse;

(3) A voyage between the contiguous states of the United States and the states of Hawaii or Alaska or between the states of Hawaii and Alaska.

The Coast Guard has interpreted this definition to not include a "Great Lakes voyage" which means a voyage solely on the Great Lakes of North America and the St. Lawrence River west of a straight line drawn from Capedes Rosiers to West Point, Anticosti Island and, on the north side of Anticosti Island, the 63rd Meridian.

[2] This portfolio may be included in the operating manual required in § 109.121.

§ 107.405 Safety equipment certificate.

(a) A self propelled unit of at least 500 gross tons that engages in international voyages is issued a safety equipment certificate if the inspector issues it a certificate of inspection under § 107.211 or § 107.215 and it meets Chapter 3 of the International Convention for the Safety of Life at Sea, 1960, June 17, 1960, 16 UST 185, TIAS 5780, 536 UNTS 27.

(b) A Safety Equipment Certificate expires 24 months after the date of issue.

§ 107.409 Safety Construction Certificate.

(a) Application for a Safety Construction Certificate is made by indicating in the space provided on the Application for Inspection Form CG-3752 whether the American Bureau of Shipping or the Coast Guard is to issue the certificate.

(b) The American Bureau of Shipping or the Coast Guard may issue a self-propelled unit of at least 500 gross tons that engages on international voyages a Safety Construction Certificate if the unit meets the requirements in Regulation 12(a)(ii), Chapter I of the *International Convention for the Safety of Life at Sea, 1960*, June 17, 1960, 16 UST 185, TIAS 5780, 536 UNTS 27.

(c) A Safety Construction Certificate expires 60 months after the date of issue.

(d) If a unit fails to meet the requirements in Regulation 12(a)(ii), the Coast Guard may—

(1) Suspend an unexpired Safety Construction Certificate; and

(2) Revoke an unexpired Safety Construction Certificate.

§ 107.413 Exemption certificate.

(a) An owner or operator of a unit may request an exemption from the requirements of the *International Convention for the Safety of Life at Sea, 1960*, June 17, 1960, 16 UST 185, TIAS 5780, 536 UNTS 27 (SOLAS 60) by writing to the appropriate OCMI.

(b) The Commandant (G-MVI) may exempt a self-propelled unit of at least 500 gross tons on an international voyage from any of the requirements in the *International Convention for the Safety of Life at Sea, 1960*, June 17, 1960, 16 UST 185, TIAS 5780, 536 UNTS 27 (SOLAS 60) if the unit meets the conditions of Regulation 4 of Part A, Chapter I, of SOLAS 60 which states the following:

A ship which is not normally engaged on international voyages but which, in exceptional circumstances, is required to undertake a single international voyage may be exempted by the Administration from any of the requirements of the present Regulations provided that it complies with safety requirements which are adequate in the opinion of the Administration for the voyage which is to be undertaken by the ship.

(c) The Commandant (G-MVI) may exempt a self-propelled unit of at least 500 gross tons on an international voyage from the requirements of Chapter III (Lifesaving Appliances, & C.) of SOLAS 60 if the unit meets the conditions of Regulation 3 of Chapter III which states in part:

The Administration, if it considers that the sheltered nature and conditions of the voyage are such as to render the application of the full requirements of this chapter (Chapter III) unreasonable or unnecessary, may to that extent exempt from the requirements of this chapter individual ships or classes of ships which, in the course of their voyage, do not go more than 20 miles from the nearest land. . . .

(d) The Commandant (G-MVI) may exempt a unit from the requirements of Chapter II (Construction) of SOLAS 60 if the unit meets the conditions of Regulation 1(c) of Part A of Chapter II of SOLAS 60 which states the following: The Administration may, if it considers that the sheltered nature and conditions of the voyage are such as to render the application of any specific requirements of this chapter (Chapter II) unreasonable or unnecessary, exempt from those requirements individual ships or classes of ships belonging to its country which, in the course of their voyage, do not proceed more than 20 miles from the nearest land.

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AUTHORITY: Sec. 2, 87 Stat. 418 (46 U.S.C. 86); sec. 3, 82 Stat. 341, as amended (46 U.S.C. 367); R.S. 4405, as amended (46 U.S.C. 375); sec. 10, 35 Stat. 428 (46 U.S.C. 395); R.S. 4423, as amended (46 U.S.C. 400); R.S. 4429, as amended (46 U.S.C. 407); R.S. 4430, as amended (46 U.S.C. 408); 88 Stat. 423 (46 U.S.C. 411); R.S. 4434, as amended (46 U.S.C. 412); R.S. 4462, as amended (46 U.S.C. 416); sec. 1, 73 Stat. 475 (46 U.S.C. 481); sec. 4, 67 Stat. 462 (43 U.S.C. 1333(d)); sec. 6(b)(1), 80 Stat. 937 (49 U.S.C. 1655(b)(1)); 49 CFR 1.46(b) and (n)(6).

Subpart A—General

§ 108.103 Equipment not required on a unit.

Each item of lifesaving and firefighting equipment that a unit has in addition to those required by this part must meet the requirements of this subchapter for that item of equipment.

§ 108.105 Substitutes for required fittings, material, apparatus, equipment, arrangements, calculations and tests.

(a) Substitutes for fittings, material, apparatus, equipment, arrangements, calculations, and tests required in this Subchapter may be accepted by the Commandant (G-MMT), if the substitute provides an equivalent level of safety.

(b) In any case where it is shown to the satisfaction of the Commandant that the use of any particular equipment, apparatus, arrangement, or test is unreasonable or impracticable, the Commandant may permit the use of alternate equipment, apparatus, arrangement, or test to such an extent and upon such condition as will insure, to his satisfaction, a degree of safety consistent with the minimum standards set forth in this subchapter.

§ 108.109 Classification society standards.

(a) Any person who desires to use the rules of a classification society, other than the American Bureau of Shipping, to meet requirements in this Subchapter must request recognition of that society from the Commandant (G-MMT). The relevant rules must be submitted with the request.

Subpart B—Construction and Arrangement

HULL STRUCTURE

§ 108.113 Structural standards.

Except as provided in § 108.109, each unit must meet the structural standards of the American Bureau of Shipping's *Rules for Building and Classing Offshore Mobile Drilling Units, 1978.*

§ 108.114 Appliances for watertight and weathertight integrity.

(a) Appliances to ensure watertight integrity include watertight doors, hatches, scuttles, bolted manhold covers, or other watertight closures for openings in watertight decks and bulkheads.

(b) Appliances to ensure weathertight integrity include weathertight doors and hatches, closures for air pipes, ventilators, ventilation intakes and outlets, and closures for other openings in deckhouses and superstructures.

(c) Each internal opening fixed with appliances to ensure watertight integrity which are used intermittently during operation of the unit while afloat must meet the following:

(1) Each door, hatch, and scuttle must—

(i) Be remotely controlled from a normally manned control station, and be operable locally from both sides of the bulkhead; or

(ii) If there is no means of remote control there must be an alarm system which signals whether the appliance is open or closed both locally at each appliance and in a normally manned control station.

(2) Each closing appliance must remain watertight under the design water pressure of the watertight boundary of which it is a part.

(d) Each external opening fitted with an appliance to ensure weathertight integrity must be located so that it would not be submerged below the final equilibrium waterline if the unit is subjected simultaneously to—

(1) Damage causing flooding described in §§ 108.319 through 108.323; and

(2) A wind heeling moment calculated in accordance with § 108.311 using a wind velocity of 25.8 meters per second (50 knots).

§ 108.115 Sliding watertight doors.

If a unit is equipped with sliding watertight doors, each sliding watertight door must be approved under Subpart 163.001 of Subchapter Q of this chapter.

FIRE PROTECTION: GENERAL

§ 108.123 Isolation of combustible material.

Each internal combustion engine exhaust, boiler and galley uptake, and similar heat source must be separated or insulated from combustible materials.

§ 108.127 Storage lockers for combustibles.

Each oil and paint locker must be made of steel or an equivalent material or be completely lined with steel or an equivalent material as described in § 108.131(c) of this subpart.

STRUCTURAL FIRE PROTECTION

§ 108.131 Definitions.

(a) "Standard Fire Test" means the test in which specimens of the relevant bulkheads or decks, having a surface of approximately 4.65 square meters (50 square feet) and a height of 2.44 meters (8 feet) resembling as closely as possible the intended construction and including, where appropriate, at least one joint, are exposed in a test furnace to a series of temperature relationships approximately as follows:

(1) At the end of 5 minutes—538°C. (1,000°F.)

(2) At the end of 10 minutes—704°C. (1,300°F.)

(3) At the end of 30 minutes—843°C. (1,550°F.)

(4) At the end of 60 minutes—927°C. (1,700°F.).

(b) Bulkheads and decks are defined and classed as follows:

(1) "A class bulkhead or deck" means a bulkhead or deck that—

(i) Is made of steel or other equivalent material; and

(ii) Prevents the passage of flame and smoke for 60 minutes if subjected to the standard fire test.

(2) "A 60 bulkhead or deck" means an A class bulkhead or deck that—

(i) Is insulated with approved insulation, bulkhead panels, or deck covering;

(ii) If subjected to the standard fire test for 60 minutes, has an average temperature rise on the unexposed side of the insulated bulkhead or deck of less than 139°C. (250°F.) above the temperature before the standard fire test and has a temperature rise at any point on the unexposed surface, including any joint, of less than 180°C. (325°F.) above the temperature before the standard fire test.

(3) "B class bulkhead or deck" means a bulkhead or deck that—

(i) Is made of approved noncombustible material;

(ii) Prevents flame from passing through it for 30 minutes if subjected to the standard fire test.

(4) "C class bulkhead or deck" means a bulkhead or deck made of approved noncombustible material.

(c) "Equivalent material" means a material that by itself or with insulation has smoke and fire retardant properties equal to that of the steel required for "A" or "B" class bulkheads or decks and has structural qualities equivalent to steel at the end of the applicable fire exposure.

(d) "Approved material" means a material approved under one of the following subparts of Subchapter Q of this chapter:

(1) Deck coverings, Subpart 164.006.

(2) Structural insulation, Subpart 164.007.

(3) Bulkhead panel, Subpart 164.008.

(4) Noncombustible materials, Subpart 164.009;

(5) Interior finishes, Subpart 164.012.

(e) "Stairtower" means a stairway that penetrates more than one deck within the same enclosure, or two or more stairways that—

(1) Are arranged vertically one above the other; or

(2) Penetrate both the deck and the overhead within the same enclosure.

(f) "Accommodation space" includes, sleeping, mess, hospital, recreational, toilet, washing and shower spaces, and corridors.

§ 108.133 Hull superstructure, structural bulkheads, decks, and deckhouses.

Each hull superstructure, structural bulkhead, deck, and deckhouse must be made of steel or an equivalent material.

§ 108.135 Boundary bulkheads, decks of galleys, and combustible material lockers.

Each boundary bulkhead and deck of each galley, each combination galley and messroom, and each combustible material storage locker must be an A class bulkhead and A class deck respectively.

§ 108.137 Bulkhead and deck separations of accommodation spaces.

Each boundary bulkhead and deck that separates an accommodation space or control station from the following must be an A class bulkhead and A class deck respectively—

(a) Machinery space;

(b) Galley or combination galley and messroom;

(c) Main pantry;

(d) classified space;

(e) Store room.

§ 108.139 Boundary bulkheads and decks of a space containing emergency power.

Each boundary bulkhead and deck of a space containing an emergency electric power source or components of

an emergency electric power source must be an A class bulkhead and A class deck respectively. When separate but adjoining spaces are provided for such equipment, boundary bulkhead type construction is not required for the separating partitions common to each space.

§ 108.141 Boundary bulkheads and decks between the emergency power source and service generators.

Each boundary bulkhead and deck of a space containing an emergency electric power source or components of an emergency electric power source that adjoins a space containing a ship's service generator, the components of a ship's service generator, or a classified space must be an A-60 bulkhead and A-60 deck.

§ 108.143 Accommodation space.

(a) Each corridor bulkhead in an accommodation space must be an A class or B class bulkhead except if an A class bulkhead is specifically required by this Part.

(b) No door in a corridor bulkhead in an accommodation space may have a louver, except that a stateroom, lounge, or recreation room door may have louvers in its lower half.

(c) Each stairtower, elevator, and dumbwaiter, and other trunk must be enclosed by A class bulkheads.

(d) Each bulkhead not described under paragraph (a) of this section must be either A class, B class, or C class bulkheads.

(e) At least one opening to each stairway must be enclosed by either A class or B class bulkheads and doors.

(f) Each stairtower must have doors at all levels and each must be an A class door.

(g) Each door required by paragraphs (e) and (f) of this section—

(1) Must be self-closing;

(2) May not have any means to permanently hold the door open, except for magnetic holdbacks that are operated from the bridge or other remote location.

(h) Interior stairs, including stringers and treads, must be made of steel or an equivalent material.

(i) Except in washrooms and toilet spaces, each deck covering in an accommodation space must be made of an approved material, except an overlay on a deck for leveling or finishing that is not more than 9.375 millimeters (⅜ inch) thick.

(j) Except as provided in paragraph (1), each ceiling, lining, insulation, and pipe and duct lagging in an accommodation space must be made of an approved material that is noncombustible.

(k) Each sheathing, furring, or holding piece used to secure a bulkhead, ceiling, lining, or insulation in an accommodation space must be made of an approved material that is non-combustible.

(l) No bulkhead, lining, or ceiling in an accommodation space may have a combustible veneer greater than 2 millimeters (1/12 inch) in thickness.

(m) Each corridor or hidden space in an accomodation space may be covered by an approved interior finish or a reasonable number of coats of paint. However, no corridor or hidden space may have combustible veneer, trim, or decoration except material approved under Subpart 164.012 of this Chapter.

§ 108.145 Hatches and tonnage openings.

Each hatch, except a hatch between storage spaces and each tonnage opening closure, must be made of steel or an equivalent material of the same class as the bulkhead or deck where the opening occurs.

§ 108.147 Certain paints prohibited.

No nitrocellulose or other highly flammable or noxious fume-producing paint or lacquer may be used on a unit.

MEANS OF ESCAPE

§ 108.151 Two means required.

(a) Each of the following must have at least 2 means of escape:

(1) Each accommodation space with a deck area of at least 27 sq. meters (300 sq. ft.).

(2) Each space, other than an accommodation space, that is continuously manned or used on a regular working basis except for routine security checks.

(3) Weather deck areas where personnel may be normally employed.

(b) When two means of escape are required from a space below the main deck, one the means of escape must provide for a rapid escape through openings that are not required to be watertight by damage stability considerations.

(c) When two means of escape are required from a space above the main deck, one of the means of escape must provide for a rapid escape to a weather deck.

§ 108.153 Location of means of escape.

The required two means of escape must be through exits that minimize the possibility of having both exits blocked if a fire or other casualty occurs in the area.

§ 108.155 Restrictions on means of escape utilized.

A required means of escape may not be a vertical ladder or deck scuttle, except that one of the means of escape may be a vertical ladder or deck scuttle if a stairway would be impracticable.

§ 108.157 Locked doors.

No door to the required means of escape may be designed to lock except—

(a) A crash door or a door that has a locking device that can be easily forced, if on both sides of the door a permanent and easily seen instruction is placed; or

(b) An outside door to a deckhouse if the door can be locked by key only and if the master or person in charge has control of the key to the door's lock.

§ 108.159 Stairways and exterior inclined ladders.

Each stairway, except a stairway in a machinery or storage space, and each exterior inclined ladder must be at least 70 centimeters (28 inches) wide with an angle of inclination from the horizontal of not more than 50 degrees, except that special consideration may be given to the installation if a 70 centimeters (28 inch) width is impracticable.

§ 108.160 Vertical ladders.

(a) Each vertical ladder must have rungs that are—

(1) At least 41 centimeters (16 inches) in length;

(2) Not more than 30 centimeters (12 inches) apart, uniform for the length of the ladder; and

(3) At least 18 centimeters (7 inches) from the nearest permanent object in back of the ladder.

(b) Except when unavoidable obstructions are encountered, there must be at least 11.5 centimeters (4½ inches) clearance above each rung.

(c) Except as provided in § 108.525(e), each exterior vertical ladder more than 6 meters (20 ft.) in length must be fitted with a cage or ladder safety device meeting ANSI Standard 14.3 (1974) for fixed ladders.

(d) No vertical fixed ladders may be made of wood.

§ 108.161 Dead end corridors.

No dead end corridor may be more than 13 meters (43 feet) long.

§ 108.165 Access to lifeboats and liferafts.

Each unit must be designed to provide direct access to the lifeboat and liferaft embarkation areas.

§ 108.167 Weather deck ladders.

Each unit must have at least one permanent, inclined ladder between each weather deck.

CLASSIFIED LOCATIONS

§ 108.170 Definitions.

(a) Classified locations are those in which flammable hydrocarbon gas or vapors, resulting from the drilling operations, may be present in quantities sufficient to produce an explosive or ignitable mixture. Location of these areas affect the design of the units' machinery, electrical, and ventilation systems. (See notes 1 and 2).

(b) For the purpose of this subpart "semi-enclosed location" means a location where natural conditions of ventilation are notably different from those on open decks due to the presence of structures such as roofs, windbreaks, or bulkheads.

NOTE.—1. Hazardous atmospheres are further defined in § 111.80 of this Chapter.

2. For specific requirements for machinery and electrical installations on mobile offshore drilling units see Subchapters "F" and "J" of this Chapter.

§ 108.171 Class I, Division 1 locations.

The following are Class I, Division 1 locations:

(a) An enclosed space that contains any part of the mud circulating system that has an opening into the space and is between the well and final degassing discharge.

(b) An enclosed or semi-enclosed location that is below the drill floor, and contains a possible source of gas release.

(c) An enclosed space that is on the drill floor, and is not separated by a solid, gas-light floor from the spaces specified in paragraph (b).

(d) A space that would normally be considered a Division 2 location under § 108.173 but where combustible or flammable gases might accumulate.

(e) A location in the weather, or a semi-enclosed location, except as provided in paragraph (b) that is within 1.5 m (5 ft.) of the boundary of any—

(1) Equipment or opening specified in paragraph (a);

(2) Ventilation outlet, access, or other opening to a Class I, Division 1 space; or

(3) Gas vent outlet.

(f) Except as provided in § 108.175, an enclosed space that has an opening into a Class I, Division 1 location.

§ 108.173 Class I, Division 2 locations.

The following are Class I, Division 2 locations:

(a) An enclosed space that has any open portion of the mud circulating system from the final degassing discharge to the mud suction connection at the mud pit.

(b) A location in the weather that is—

(1) Within the boundaries of the drilling derrick up to a height of 3 m (10 ft.) above the drill floor;

(2) Below the drill floor and within a radius of 3 m (10 ft.) of a possible source of gas release; or

(3) Within 1.5 m (5 ft.) of the boundaries of any ventilation outlet, access, or other opening to a Class I, Division 2 space.

(c) A location that is—

(1) Within 1.5 m (5 ft.) of a semi-enclosed Class I, Division 1 location indicated in § 108.171(b); or

(2) Within 1.5 m (5 ft.) of a Class I, Division 1 space indicated in § 108.171(e).

(d) A semi-enclosed area that is below and contiguous with the drill floor to the boundaries of the derrick or to the extent of any enclosure which is liable to trap gasses.

(e) A semi-enclosed derrick to the extent of its enclosure above the drill floor or to a height of 3 m (10 ft.) above the drill floor, whichever is greater.

(f) Except as provided in § 108.175 an enclosed space that has an opening into a Class I, Division 2 location.

§ 108.175 Contiguous locations.

An enclosed space that has direct access to a Division 1 or Division 2 location is the same division as that location, except—

(a) An enclosed space that has direct access to a Division 1 location is not a hazardous location if—

(1) The access has self-closing gastight doors that form an air lock;

(2) The ventilation causes greater pressure in the space than in the Division 1 location; and

(3) Loss of ventilation overpressure activates an alarm at a manned station;

(b) An enclosed space that has direct access to a Division 1 location can be considered as a Division 2 location if—

(1) The access has a self-closing, gastight door that opens into the space and that has no hold-back device;

(2) Ventilation causes the air to flow with the door open from the space into the Division 1 location; and

(3) Loss of ventilation activates an alarm at a manned control station; and

(c) An enclosed space that has direct access to a Division 2 location is not a hazardous location if—

(1) The access has a self-closing, gastight door that opens into the space and that has no hold-back device;

(2) Ventilation causes the air to flow with the door open from the space into the Division 2 location; and

(3) Loss of ventilation activates an alarm at a manned control station.

§ 108.177 Electrical equipment in classified locations.

Electrical equipment and devices installed in spaces made non-hazardous by the methods indicated in § 108.175 must only be essential equipment.

VENTILATION

§ 108.181 Ventilation for enclosed spaces.

(a) Each enclosed space must be vented or ventilated.

(b) There must be a means to close each vent or ventilating system.

(c) Each fan in a ventilating system must have remote controls installed in accordance with Subpart 111.80-13 of this chapter.

(d) There must be a means to close each doorway, ventilator, and annular space around each funnel or other opening to machinery, stowage, or working spaces. The means must be located outside the space.

(e) Each intake in a ventilating system must be located so as to prevent, as far as practicable, the intake of noxious fumes.

§ 108.185 Ventilation for enclosed classified locations.

(a) The ventilation system for each enclosed classified location must be designed to maintain a pressure differential between the enclosed classified location and each non-classified location adjacent to the enclosed classified location, so as to prevent the discharge of ignitable gases into the non-classified adjacent locations.

(b) Each air intake must be outside of enclosed classified locations.

(c) Each unit must have alarms at a continuously manned station that signal when—

(1) Gas is present in a enclosed classified location; or

(2) The ventilation system for the space is not working.

(d) Each ventilation system for enclosed classified locations must provide a complete change of air every five minutes.

§ 108.187 Ventilation for brush type electric motors in classified spaces.

Ventilation for brush type electric motors in classified locations must meet N.F.P.A. 496-1974 "Standard for Purged and Pressurized Enclosures for Electrical Equipment in Hazardous Locations", except audible and visual alarms may be used if shutting down the motors may cause unsafe conditions.

ACCOMMODATION SPACES

§ 108.193 Restrictions.

(a) There must be no direct communication between the accommodation spaces and any chainlocker, stowage, or machinery space, except through solid, close-fitted doors or hatches.

(b) No access, vent, or sounding tube from a fuel or oil tank may open into any accommodation space, except that

accesses and sounding tubes may open into corridors.

§ 108.195 Location of accommodation spaces.

(a) On surface type units, accommodation spaces must not be located forward of a vertical plane located at 5 percent of the unit's length aft of the stem, at the designed summer load line.

(b) On all units, the deckhead of each accommodation space must be above the deepest load line.

§ 108.197 Construction of accommodation spaces.

(a) Each sleeping, mess, recreational, or hospital space that is adjacent to or immediately above a stowage or machinery space, paint locker, drying room, washroom, toilet space, or other odor source must be made odorproof.

(b) Each accommodation space that is adjacent to or immediately above a galley, machinery space, machinery casing, boiler room, or other noise or heat source, must be protected from the heat and noise.

(c) Where the shell or an unsheathed weather deck forms a boundary of an accommodation space, the shell of deck must have a covering that prevents the formation of moisture.

(d) The deckheads of each accommodation space must be a light color.

(e) Each accommodation space in which water may accumulate must have a drain scupper located in the lowest part of the space, considering the average trim of the unit.

(f) Each public toilet space must be constructed and located so that its odors do not readily enter any sleeping, mess, recreational, or hospital space.

§ 108.199 Arrangement of sleeping spaces.

To the extent practicable, each occupation group must be berthed together in sleeping spaces arranged to minimize disturbance created by personnel leaving for or arriving from a working period.

§ 108.201 Size of sleeping spaces.

(a) No sleeping space may berth more than four persons, except that a sleeping space for personnel not regularly employed on a unit may berth up to six persons if the space meets § 108.199 and berthing of six persons in that space is authorized by the Commandant (G-MMT).

(b) Without deducting any equipment used by the occupants, each sleeping space must have for each occupant—

(1) 2.8 square meters (approximately 30 square feet) of deck area; and

(2) 6 cubic meters (approximately 210 cubic feet) of volume.

(c) Each sleeping space must have at least 191 centimeters (approximately 6 feet 3 inches) of headroom over clear deck areas.

§ 108.203 Berths and lockers.

(a) Each sleeping space must have a separate berth for each occupant.

(b) No more than one berth may be placed over another.

(c) Each berth must have a framework of hard, smooth material that is not likely to corrode or harbor vermin.

(d) Each berth must be arranged to provide ample room for easy occupancy.

(e) Each berth must be at least 76 centimeters (approximately 30 inches) wide by 193 centimeters (approximately 76 inches) long.

(f) Adjacent berths must be separated by a partition that extends at least 46 centimeters (approximately 18 inches) above the sleeping surface.

(g) The bottom of a lower berth must be at least 30 centimeters (approximately 12 inches) above the deck.

(h) The bottom of an upper berth must be at least 76 centimeters (approximately 2 feet 6 inches) from the bottom of the berth below it and from the deck or any pipe, ventilating duct, or other overhead installation.

(i) Each berth must have a berth light.

(j) Each occupant of a sleeping space must have a readily accessible locker of hard, smooth material.

(k) Each locker must be at least .194 square meters (approximately 300 square inches) in cross section and 1.53 meters (approximately 60 inches) high.

§ 108.205 Wash spaces; toilet spaces; and shower spaces.

(a) For the purposes of this section—

(1) "Private facility" means a toilet, washing, or shower space that is accessible only from one single or double occupancy sleeping space;

(2) "Semi-private facility" means a toilet, washing or shower space that is accessible from either of two one-to-four person occupancy sleeping spaces; and

(3) "Public facility" means a toilet, washing, or shower space that is not private or semi-private.

(b) Each private facility must have one toilet, one shower, and one washbasin, all of which may be in a single space.

(c) Each semi-private facility must have at least one toilet and one shower, which may be in a single space.

(d) Each room adjoining a semi-private facility must have a washbasin if a washbasin is not installed in a semi-private facility.

(e) Each unit must have enough public facilities to provide at least one toilet, one shower, and one washbasin for each eight persons who occupy sleeping spaces that do not have private or semi-private facilities.

(f) Urinals may be installed in toilet rooms, but no toilet required in this section may be replaced by a urinal.

(g) Each public toilet space and washing space must be convenient to the sleeping space that it serves.

(h) No public facility may open into any sleeping space.

(i) Each washbasin, shower, and bathtub must have hot and cold running water.

(j) Adjacent toilets must be separated by a partition that is open at the top and bottom for ventilation and cleaning.

(k) Public toilet facilities and shower facilities must be separated.

(l) Each public facility that is a toilet space must have at least one washbasin unless the only access to the toilet space is through a washing space.

(m) Each toilet must have an open front seat.

(n) Each washing space and toilet space must be so constructed and arranged that it can be kept in a clean and sanitary condition and the plumbing and mechanical appliances kept in good working order.

(o) Washbasins may be located in sleeping spaces.

§ 108.207 Messrooms.

(a) Each messroom that is not adjacent to the galley that serves it must be equipped with a steamtable.

(b) Each messroom must seat the number of persons expected to eat in the messroom at one time.

§ 108.209 Hospital spaces.

(a) Each unit carrying twelve or more persons on a voyage of more than three days must have a hospital space.

(b) Each hospital space must be suitably separated from other spaces.

(c) No hospital space may be used for any other purpose, when used for care of the sick.

(d) An entrance to each hospital space must be wide enough and arranged to readily admit a person on a stretcher.

(e) Each berth in a hospital space must be made of metal.

(f) Each upper berth must be hinged and arranged so that it can be secured clear of the lower berth.

(g) Each hospital space must have at least one berth that is accessible from both sides.

(h) Each hospital space must have one berth for every 12 persons or portion thereof on board, who are not berthed in single occupancy rooms, but the number of berths need not exceed six.

(i) Each hospital space must have a toilet, washbasin, and bathtub or shower accessible from the hospital space.

(j) Each hospital space must have clothes lockers, a table, and seats.

§ 108.210 Hospital space not required.

The hospital space required under § 108.209 is not required on a unit if one single or double occupancy sleeping space, designated and equipped as a treatment or isolation room or both is available for immediate medical use, and has—

(1) An entrance that is wide enough and arranged to readily admit a person on a stretcher;

(2) A single berth or examination table that is accessible from both sides; and

(3) A washbasin in or immediately adjacent to it.

§ 108.211 Miscellaneous accommodation spaces.

(a) Each unit must have enough facilities for personnel to wash their own clothes, including at least one tub or sink that has hot and cold running water.

(b) Each unit must have enough equipment or space for the personnel to dry their own clothes.

(c) Each unit must have an accommodation space that can be used for recreation.

§ 108.213 Heating requirements.

(a) Each accommodation space must be heated by a heating system that can maintain at least 20°C. (68°F.).

(b) Radiators and other heating apparatuses must be constructed, located or shielded so as to avoid risk of—

(1) Fire;

(2) Danger; and

(3) Discomfort

to the occupants of each accommodation space.

(c) Each exposed pipe in an accommodation space, leading to a radiator or other heating apparatus must be insulated.

§ 108.215 Insect screens.

(a) Accommodation spaces must be protected against the admission of insects.

(b) Insect screens must be installed when natural ventilation is provided.

RAILS

§ 108.217 Guardrails and bulwarks.

(a) Each unit must have guardrails or bulwarks along the edge of the bridge, of each deck, and of each deck opening.

(b) Each guardrail and bulwark must extend at least one meter (39.37 inches) above the deck except where this height may interfere with the normal operation of the unit, a lesser height may be approved.

(c) Removable guardrails may be installed where operating conditions warrant their use.

§ 108.219 Guardrails.

(a) Except for exposed peripheries of a freeboard or superstructure deck, each guardrail must have at least two evenly spaced courses.

(b) At exposed peripheries of a freeboard or superstructure deck, each guardrail must have at least three courses not more than 38 centimeters (15 in.) apart with the lowest course not more than 23 centimeters (9 in.) above the deck.

(c) For a rounded gunwale, the guardrail must be at the edge of the flat of the deck.

§ 108.221 Storm rails.

Each unit must have a storm rail in the following locations:

(a) On each deckhouse side that is normally accessible.

(b) On each side of each passageway that is wider than 1.83 meters (6 feet).

(c) On at least one side of each passageway that is less than 1.83 meters (6 feet) wide.

§ 108.223 Guards on exposed equipment.

Each unit must have hand covers, guards, or rails installed on all belts, gears, shafts, pulleys, sprockets, spindles, flywheels or other reciprocating, rotating or moving parts of machinery or equipment normally exposed to contact by personnel.

HELICOPTER FACILITIES

§ 108.231 Application.

Sections 108.231 through 108.241 apply to each unit with a helicopter landing facility.

§ 108.233 Location and size.

(a) Each helicopter deck must be—

(1) At least the size of the rotor diameter of the largest single main rotor helicopter that will be used on the facility; or

(2) If tandem main rotor helicopters use the facility, at least of a size to provide a longitudinal axis of $^9/_{10}$ the overall length of the helicopter, and a width of $^3/_4$ of the overall length of the helicopter.

NOTE.—For the purpose of paragraph (a)(2) the overall length is measured across both main rotors in the fore and aft line.

(b) Each helicopter deck must be located so as to provide clear approach/departure paths to enable the largest helicopter using the facility to operate in all weather conditions which allow helicopter operations.

§ 108.235 Construction.

(a) Each helicopter deck must be designed to accommodate the loadings (static and dynamic) imposed by operation and stowage of helicopters intended to use the facility as well as environmental loadings (wind, wave, water, snow, etc.) anticipated for the unit.

(b) The adequacy of each helicopter deck for the loadings required in paragraph (a) must be shown by design calculations. Where the placement of a load affects the suitability of a structural member, the load must be evaluated in the most unfavorable position for each member.

(c) The analysis required in paragraph (b) must be based on the dead load of the structure, existing stresses in the deck when it is an integral part of a unit's structure, and each of the following loading conditions:

(1) *Uniform distributed loading.* A loading of 2kg/m² (42 lb/ft²) applied to the helicopter deck area.

(2) *Helicopter landing impact loading.* The limit load established by the limit drop test in 14 CFR 29.725, or a load of not less than 75 percent of the helicopter maximum weight taken on a square area of 0.3×0.3 m (1 ft.×1 ft.) under each main landing gear unit applied anywhere on the helicopter deck area.

(3) *Stowed helicopter loading.* The helicopter maximum weight plus inertial forces from the helicopter due to anticipated unit motions, and applicable environmental loadings including wind loads.

(d) The landing area of each helicopter facility must—

(1) Have a non-skid surface;

(2) Have drainage facilities that prevent the collection of liquids and prevent liquids from spreading to or falling on other parts of the unit;

(3) Have recessed tie-down points; and

(4) Be free of projections, except that landing lights or other projections may be installed around the periphery of the landing deck provided they do not interfere with landing and take-off operations.

(e) The unprotected perimeter of each helicopter facility must have a safety net at least 1.5 meters (4.92 ft.) wide. The outer edge of the net must not extend more than 15 centimeters (6 in.) above the surface of the deck.

(f) Each helicopter facility must have both a main and an emergency access/egress route located as far apart from each other as practicable.

§ 108.237 Fuel storage facilities.

(a) Helicopter fuel storage tanks must be installed as far as practicable from—

(1) The landing area; and

(2) Each source of vapor ignition.

(b) Integral tanks must meet Subpart 58.50 of this Chapter.

(c) Marine portable fuel stowage tanks must meet Part 64 of this Chapter.

(d) Each marine portable fuel stowage tank must have a means to contain fuel spills or leaks.

§ 108.239 Fuel transfer equipment.

(a) Each nozzle must be a "deadman" type.

(b) Each hose must have a storage reel.

(c) Each hose must have a static grounding device.

(d) Each electric fuel transfer pump must have a control with a fuel transfer pump operation indicator light at the pump.

(e) There must be a fuel pump shut off at each of the access routes required by § 108.235(f).

(f) Each fuel transfer pump and each hose reel must have a means to contain fuel spills or leaks.

(g) Each hose must meet chapter 3 "Aircraft Fueling Hose" of National Fire Protection Association Standard for Aircraft Fuel Servicing (N.F.P.A. No. 407-1975).

§ 108.241 Visual aids.

(a) Each helicopter deck must—

(1) Have a wind direction indicator located in an unobstructed area readily visible to helicopter pilots approaching the deck;

(2) Be fitted around the perimeter with yellow and blue lights in alternate order, not more than 3 meters (10 ft.) apart; and

(3) Be marked with—

(i) The unit's identification;

(ii) A continuous line 40 centimeters (16 in.) wide on the perimeter; and

(iii) Aiming circles as may be appropriate considering deck configuration, helicopter type, and operational requirements.

(b) All markings must be in a contrasting color to the surface of the deck.

Subpart C—Stability

§ 108.301 Stability: definitions.

For the purposes of this subpart:

(a) "Normal operating condition" means a condition of a unit when loaded or arranged for drilling, field transit, or ocean transit.

(b) "Severe storm condition" means a condition of a unit when loaded or arranged to withstand the passage of a severe storm.

(c) "Downflooding" means the entry of seawater through any opening which cannot be rapidly closed watertight, into the hull, superstructure, or columns of an undamaged unit due to heel, trim, or submergence of the unit.

(d) "Downflooding angle" means the static angle from the calm seawater surface at a unit's waterline to the first opening through which downflooding could occur, considering heel, trim, and submergence of the unit when subjected to a wind heeling moment (Hm) calculated in accordance with § 108.311.

§ 108.303 Stability requirements: general.

Each unit must be designed to have at least 5 cm (2 inches) of positive metacentric height in the upright equilibrium position for the full range of drafts, whether at the operating draft for navigation, towing, or drilling afloat, or at a temporary draft when changing drafts.

§ 108.305 Intact stability requirements.

(a) Each unit must be designed so that the wind heeling moments (Hm) and righting moments calculated for each of its normal operating conditions and severe storm conditions, when plotted on graph 108.305, define areas that satisfy the equation [Area (A)]$\geq$[K]$\times$[Area (B)] where—

(1) K=1.4, except that if the unit is a column stabilized unit K=1.3;

(2) Area (A) is the area on graph 108.305 under the righting moment curve between 0° and the second intercept angle or the angle of heel at which downflooding would occur, whichever angle is less; and

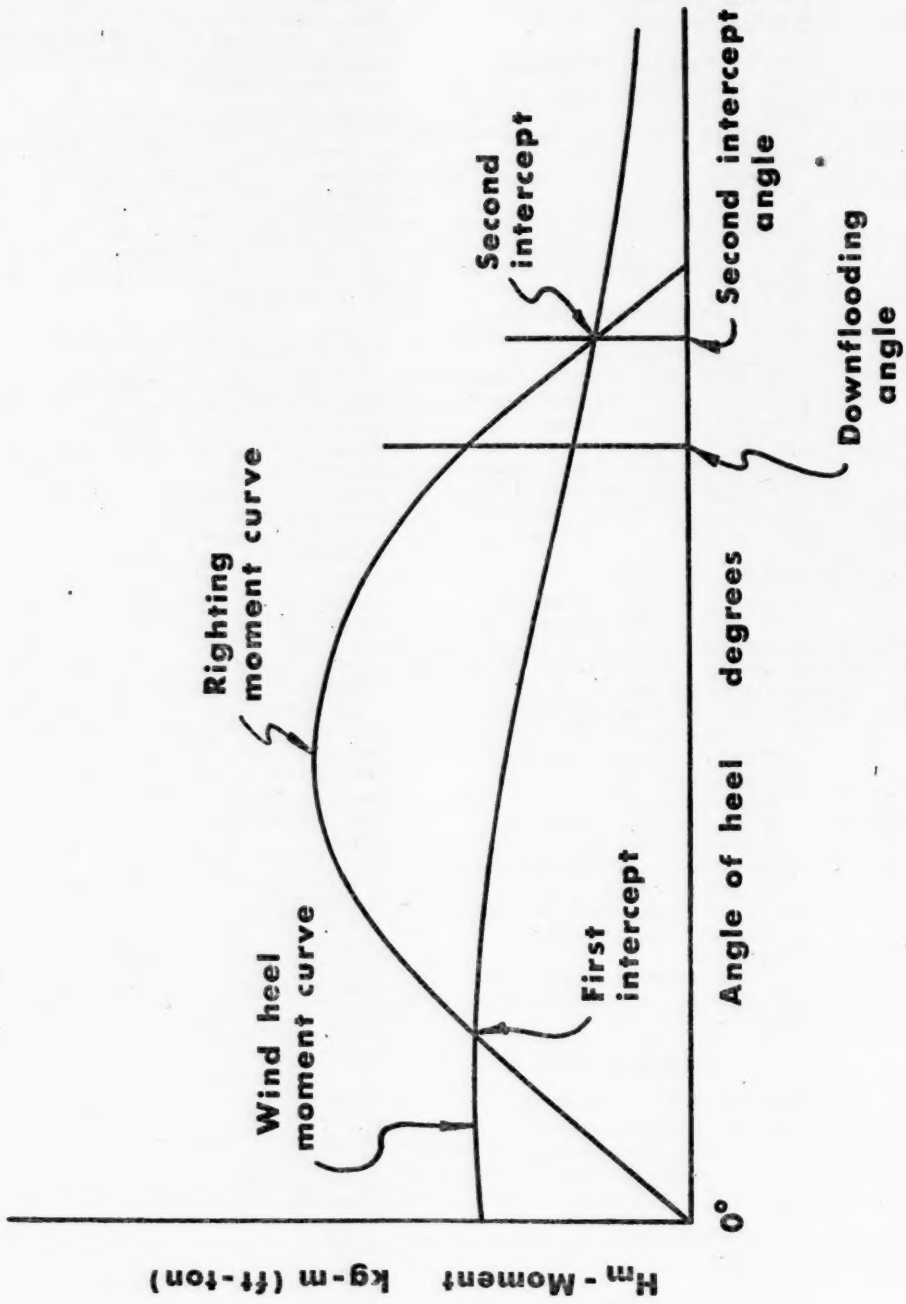
(3) Area (B) is the area on graph 108.305 under the wind heeling moment curve between 0° and the second intercept angle or the angle of heel at which downflooding of the unit would occur whichever angle is less.

(b) Each righting moment on graph 108.305 must be positive for all angles greater than 0° and less than the second intercept angle.

(c) For the purposes of this section, openings fitted with the weathertight closing appliances specified in § 108.114(b) are not considered as openings through which downflooding could occur if they can be rapidly closed and would not be submerged below the units' waterline prior to the first intercept angle, except that ventilation intakes and outlets for machinery spaces, crew spaces, and other spaces where ventilation is normally required are considered as openings through which downflooding could occur regardless of location.

(d) Each unit must be designed so that it can be changed from each of its normal operating conditions to a severe storm condition within a minimum period of time consistent with the operating manual required in § 109.121.

Graph 108.305 - Intact Stability Curves for a Given Normal Operating or Severe Storm Mode



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§ 108.309 Stability on bottom.

Each bottom bearing unit must be designed so that, while supported on the sea bottom with footings or a mat, it continually exerts a downward force on each footing or the mat when subjected to the forces of wave and current and to wind blowing at the velocities described in § 108.311(b)(3).

§ 108.311 Calculation of wind heeling moment (Hm).

(a) The wind heeling moment (Hm) of a unit in a given normal operating condition or severe storm condition is the sum of the individual wind heeling moments (H) calculated for each of the exposed surfaces on the unit; i.e., $Hm=\Sigma H$.

(b) Each wind heeling moment (H) must be calculated using the equation $H=kv^2C_hC_sAh$, where—

(1) H=wind heeling moment for an exposed surface on the unit;

(2) k=0.0623 kilograms (kg-sec^2)/m^4 (0.00338 lb/(ft^2-knots^2));

(3) v=wind velocity of—

(i) 36 meters per second (70 knots) for normal operating conditions.

(ii) 51.5 meters per second (100 knots) for severe storm conditions.

(iii) 25.8 meters per second (50 knots) for damage conditions.

(4) A=projected area of an exposed surface on the unit;

(5) C_h=height coefficient for "A" from Table 108.311(a);

(6) C_s=shape coefficient for "A" from Table 108.311(b); and

(7) h=the vertical distance from the center of lateral resistance of the underwater hull to the center of wind pressure on "A".

(c) When calculating "A" in the equation described in paragraph (b) of this section—

(1) The projected area of each column or leg, if the unit has columns or legs, must not include shielding allowances;

(2) Each area exposed as a result of heel must be included;

(3) The projected area of a cluster of deck houses may be used instead of the projected area of each individual deck house in the cluster; and

(4) The projected area of open truss work may be calculated by taking 30% of the projected areas of both the front and back sides of the open truss work rather than by determining the projected area of each structural member of the truss work.

TABLE 108.311(a).—C_h *Values*

Height				C_h
Meters		Feet		
Over	*Not exceeding*	*Over*	*Not exceeding*	
0	15.3	0	50	1.00
15.3	30.5	50	100	1.10
30.5	46.0	100	150	1.20
46.0	61.0	150	200	1.30
61.0	76.0	200	250	1.37
76.0	91.5	250	300	1.43
91.5	106.5	300	350	1.48
106.5	122.0	350	400	1.52
122.0	137.0	400	450	1.56
137.0	152.5	450	500	1.60
152.5	167.5	500	550	1.63
167.5	183.0	550	600	1.67
183.0	198.0	600	650	1.70
198.0	213.5	650	700	1.72
213.5	228.5	700	750	1.75
228.5	244.0	750	800	1.77
224.0	256.0	800	850	1.79
Above 256		Above 850		1.80

NOTE: The "C_h" value in this table used in the equation described in section 108.311(b) corresponds to the value of the vertical distance in meters (feet) from the water surface at the design draft of the unit to the center of area of the "A" value used in the equation.

TABLE 108.311(b).—C_s Values

Shape	C_s
Cylindrical shapes	0.5
Hull (surface type)	1.0
Deckhouse	1.0
Cluster of deckhouses	1.1
Isolated structural shapes (cranes, angles, channels, beams, etc.)	1.5
Under deck areas (smooth surfaces)	1.0
Under deck areas (exposed beams and girders)	1.3
Rig derrick (each face and open truss works)	1.25

NOTE.—The value of C_s in this table used in the equation described in § 108.311(b) corresponds to the shape of the projected Area "A" in the equation.

§ 108.313 Submission of intact stability data.

Intact stability data submitted under § 107.305 of this subchapter must contain the righting moment curves and wind heeling moment curves described in graph 108.305 of this subpart, each with supporting calculations, for each of the unit's normal operating conditions and severe storm conditions.

§ 108.315 Damage stability requirements.

(a) Each unit must be designed so that, while in each of its normal operating conditions and severe storm conditions, its final equilibrium waterline would remain below the lowest edge of any opening through which additional flooding could occur if the unit were subjected simultaneously to—

(1) Damage causing flooding described in §§ 108.319 through 108.323; and

(2) A wind heeling moment calculated in accordance with § 108.311(b) using a wind velocity of 25.8 meters per second (50 knots).

(b) Each unit must have a means to close off each pipe, ventilation system, and trunk in each compartment described in § 108.321 or § 108.323 if any portion of the pipe, ventilation system, or trunk is within 1.5 meters (5 feet) of the hull.

§ 108.317 General damage stability assumptions.

For the purpose of determining compliance with § 108.315 of this subpart, the assumptions are made that during flooding and the resulting change in the unit's waterline—

(a) The unit is not anchored or moored; and

(b) No compartment on the unit is ballasted or pumped out to compensate for the flooding described in §§ 108.319–108.323 of this subpart.

§ 108.319 Compartments assumed flooded: general.

The individual flooding of each of the compartments described in § 108.321 and § 108.323 of this subpart must be assumed for the purpose of determining compliance with § 108.315(a) of this subpart. Simultaneous flooding of more than one compartment must be assumed only when indicated in § 108.321 and § 108.323.

§ 108.321 Flooding on self-elevating and surface type units.

(a) On a surface type unit or self-elevating unit, all compartments within 1.5 meters (5 feet) of the hull of the unit between two adjacent main watertight bulkheads, the bottom shell, and the uppermost continuous deck or first superstructure deck where superstructures are fitted must be assumed to be subject to simultaneous flooding.

(b) On the mat of a self-elevating unit, all compartments of the mat must be assumed to be subject to individual flooding.

§ 108.323 Flooding on column stabilized units.

(a) Watertight compartments that are outboard of, or traversed by, a plane which connects the vertical centerlines of the columns on the periphery of the unit, and within 1.5 meters (5 feet) of an outer surface of a column or footing on the periphery of the unit, must be assumed to be subject to flooding as follows:

(1) When a column is subdivided into watertight compartments by horizontal watertight flats, all compartments in the column within 1.5 meters (5 feet) of the unit's waterline before damage causing flooding must be assumed to be subject to simultaneous flooding.

(2) When a column is subdivided into watertight compartments by vertical watertight bulkheads, each two adjacent compartments must be assumed subject to simultaneous flooding if the distance between the vertical watertight bulkheads, measured at the column periphery, is equal to or less than one-eighth of the column perimeter at the draft under consideration.

(3) When a column is subdivided into watertight compartments by horizontal watertight flats and vertical watertight bulkheads, those compartments that are within the bounds described in paragraph (a)(2) and within 1.5 meters (5 feet) of the unit's waterline before damage causing flooding must be assumed to be subject to simultaneous flooding.

(b) Each compartment in a footing must be assumed to be subject to individual flooding when any part of the compartment is within 1.5 meters (5 feet) of the unit's waterline before damage causing flooding.

§ 108.325 Permeabilities.

The calculations submitted in accordance with § 108.329 of this subpart must show the permeability of each space considered in the calculations. The calculation of each permeability used must also be shown unless the value used is listed in Table 108.325.

TABLE 108.325—*Permeability Values*

Space	Permeability
Cargo or storage space	[1]0.95
Accommodation space	0.95
Machinery space	0.85
Tank intended for liquids	[2]0.0 or 0.95

[1] Actual value may be calculated and used.
[2] Use the value which results in the greatest change in the unit's waterline.

§ 108.329 Submission of damage stability data and calculations.

Damage stability data must be submitted for approval before the unit's original inspection for certification. These data must contain residual righting moment curves, wind heeling moment curves, and plans or sketches showing the unit's final equilibrium waterline, with supporting calculations for each, for each of the unit's normal operating conditions and severe storm conditions. These data must show compliance with § 108.315.

§ 108.335 Stability test.

(a) Except as provided in paragraph (c) of this section, the owner of a unit must—

(1) Conduct a stability test of the unit to determine the location of its center of gravity and lightship displacement; and

(2) Submit the results of the test for approval by the Coast Guard before the unit's original inspection for certification.[1]

(b) An authorized Coast Guard representative must be present at each stability test conducted under this section

(c) A stability test is not required for a unit if the owner provides the Coast Guard with the Coast Guard approved results of a stability test of a sister unit and the Commandant determines that reliable stability information for the unit not tested is obtainable from the test results of the sister unit.

§ 108.337 Plans and information required at the stability test.

The owner of a unit must provide the following plans and information to the authorized Coast Guard representative prior to the stability test:

(a) Lines.

(b) Curves of form.

(c) Capacity plans showing capacities and vertical and longitudinal centers of gravity of stowage spaces and tanks.

(d) Tank sounding tables.

(e) Draft mark locations.

(f) General arrangement plan of decks, holds, and inner bottoms.

(g) Inboard and outboard profile.

(h) A complete list of material or equipment to be installed, removed, or relocated after the test, including the weight and location of each item on the list.

§ 108.339 Stability test preparations.

The following preparations must be made before conducting a stability test:

(a) The unit must be as complete as practicable at the time of the test.

(b) Each tank must be either empty and dry or full and without air pockets, except that a tank may be partially filled if the Commandant (G-MMT) determines that compliance with this requirement is impracticable and that the effect of partial filling on the location of the center of gravity and the displacement of the unit can be accurately determined.

(c) All dunnage, tools, and other items extraneous to the complete unit must be removed from the unit.

(d) The water depth at the mooring site must provide ample clearance against grounding.

(e) Each mooring line must be arranged so that it does not interfere with the free inclination of the unit during the test.

(f) The draft and axis of rotation selected for the test must be those that result in acceptable accuracy in calculating the unit's displacement and location of center of gravity.

(g) At least two weeks prior to the date of the test, a stability test procedure must be submitted for approval. The procedure must include:

(1) Identification of the unit to be tested.

(2) Date and location of the test.

(3) Inclining weight data.

(4) Pendulum locations and lengths.

(5) Approximate draft and trim of the unit.

(6) Condition of each tank.

(7) Estimated items to be installed, removed, or relocated after test, including the weight and location of each item.

(8) Schedule of events.

§ 108.341 Stability test deviation.

The authorized Coast Guard representative present at a stability test may allow a deviation from the requirement of § 108.337 of this subpart if he determines that the deviation will not affect the accuracy of the test results.

§ 108.343 Stability: alterations.

Where alterations are made which materially affect the stability of a unit, amended stability information must be approved by the Coast Guard. The Coast Guard may require the unit to have a new stability test.

Subpart D—Fire Extinguishing Systems

§ 108.401 Fire main system.

Each unit must have a fire main system.

§ 108.403 Fire extinguishing systems: General.

(a) Each of the following on a unit must have an approved fixed gaseous type extinguishing system:

(1) Each paint locker, oil room, and similar space.

(2) Each enclosed space containing internal combustion or gas turbine main propulsion machinery.

(3) Each enclosed space containing internal combustion machinery with

[1] A stability letter is issued by the Coast Guard after approval of the test results and of the information required in § 109.121.

an aggregate power of at least 1000 B.H.P.

(4) Each enclosed space containing a fuel oil unit, including purifiers, valves, or manifolds for main propulsion machinery or internal combustion machinery with an aggregate power of at least 1000 B.H.P.

(5) Each enclosed ventilation system for electric motors or generators used for vital services including bilge pumps, fire pumps, or propulsion.

(b) Each space containing an oil fired boiler, the fuel oil unit or valves for the boiler, or manifolds in the line between the fuel settling tanks and the boiler on a unit must have a fixed gas type, foam, water spray, or other approved fire extinguishing system.

§ 108.403a Fire extinguishing systems: non-vital services.

Each enclosed ventilating system for electric motors or generators not used for vital services must have an access into the system for firefighting or be protected by a fixed fire protection system.

§ 108.404 Selection of fire detection system.

(a) If a fire detector is in a space, it must provide effective detection of fires most likely to occur in the space.

(b) The fire detection system must be designed to minimize false alarms.

§ 108.405 Fire detection system.

(a) Each fire detection system and each smoke detection system on a unit must—

(1) Be approved by the Commandant; and

(2) Have a visual alarm and an audible alarm in the pilothouse or at a normally manned control station for the system.

(b) Each fire detection system must be divided into zones to limit the area covered by any particular alarm signal.

(c) Each visual alarm must—

(1) Have a chart or diagram next to the alarm that shows the location of the zones in the system and that contains the instructions for operating, and testing the system;

(2) When activated show the zone in the system where fire has been detected; and

(3) Be in a noticeable location in the pilothouse or control station.

§ 108.407 Detectors for electric fire detection system.

(a) Each detector in an electric fire detection system must be located where—

(1) No portion of the overhead of a space protected is more than 3 meters (10 feet) from a detector;

(2) Beams and girders extending below the ceiling of the space protected and any other obstructions do not detract from the effectiveness of the detector; and

(3) Damage to the detector is unlikely to occur if it is not protected.

(b) Each detector must be set to activate at not less than 57° C (135° F) and at not more than 73° C (165° F), except that if a space normally has a high ambient temperature each detector may be set to activate at not less than 80° C (175° F) and not more than 107° C (225° F).

§ 108.409 Location and spacing of tubing in pneumatic fire detection system.

(a) All tubing in a pneumatic fire detection system must be on the overhead or within 300 millimeters (12 inches) of the overhead on a bulkhead in a location where—

(1) No portion of the overhead is more than 3.6 meters (12 feet) from the nearest point of tubing;

(2) Beams or girders extending below the ceiling or other obstructions do not detract from the effectiveness of the tubing; and

(3) Damage to the tubing, is unlikely to occur if it is not protected.

(b) If tubing in a tubing circuit is installed in an enclosed space, at least 5% of the tubing in the circuit must be exposed in the space, except that at least 7.6 meters (25 feet) of tubing must always be exposed in the space.

(c) A pneumatic fire detection system must be set to activate after approximately a 22°C. (40°F.) per minute increase in temperature at the center of the circuit in the system.

§ 108.411 Smoke detection system.

Each smoke accumulator in a smoke detection system must be located on the overhead of the compartment protected by the system in a location—

(a) Where no portion of the overhead of the compartment is more than 12 meters (40 feet) from an accumulator;

(b) That is no closer to the opening of a ventilator than 3 times the diameter or equivalent size of the opening.

(c) Where damage to the accumulator is unlikely to occur if it is not protected.

§ 108.413 Fusible element fire detection system.

(a) A fusible element fire detection system may be installed.

(b) The arrangements for the system must be acceptable to the Commandant.

Fire Main System

§ 108.415 Fire pump: general.

A fire main system must have at least two independently driven fire pumps that can each deliver water at a continuous pitot tube pressure of at least 3.5 kilograms per square centimeter (approximately 50 pounds per square inch) at at least two fire hose nozzles that are connected to the highest two fire hydrants on the unit. Alternative designs that meet the pressure requirement of this paragraph will be considered for column stabilized and self elevating units.

§ 108.417 Fire pump components and associated equipment.

(a) Each fire pump in a fire main system must have a relief valve on its discharge side that is set to relieve at 1.75 kilograms per square centimeter (approximately 25 pounds per square inch) in excess of the pump discharge pressure necessary to meet the pressure required in § 108.415 for the pump or 8.6 kilograms per square centimeters (approximately 125 pounds per square inch), whichever is greater. A relief valve may be omitted if the pump operating under shut off condition is not capable of developing the pressure described in § 108.415 plus 1.75 kilograms per square centimeter (25 pounds per square inch).

(b) Each fire pump in a fire main system must have a pressure gauge on its discharge side.

(c) Fire pumps may be used for other purposes. One of the required pumps must be kept available for use on the fire system at all times. If a fire pump is used in a system other than the fire main system, except for branch lines connected to the fire main for deck washing, each pipe connecting the other system must be connected to the pump discharge through a shut off valve at a manifold near the pump. If the fire pump exceeds the pressure in § 108.417(a), the pipe leading from the discharge manifold to other portions of the fire main system must have a reducing station and a pressure gauge in addition to the pressure gauge required by paragraph (b) of this section.

(d) If a fire pump has a reducing station, the relief valve required by paragraph (a) of this section for the pump and the additional pressure gauge required in paragraph (c) of this section must not be located on the discharge side of the reducing station.

(e) An oil line must be connected to a fire pump.

§ 108.419 Fire main capacity.

The diameter of the fire main must be sufficient for the effective distribution of the maximum required discharge from two fire pumps operating simultaneously.

§ 108.421 Location of fire pumps and associated equipment.

Each fire pump required by § 108.415, and the source of power, controls, sea connections for the fire

pump, and booster pumps, if installed, must be installed in locations where, if a fire occurs in an enclosed space, all of the fire pumps on the unit are not made inoperative, except that if compliance with this requirement is impracticable, a gas type extinguishing system may be installed to protect at least one of the fire pumps, its source of power, and controls.

§ 108.423 Fire hydrants and associated equipment.

(a) A fire main system must have enough fire hydrants so that each accessible space may be sprayed with at least two spray patterns of water.

(b) In a main machinery space, except a shaft alley with no assigned space for stowage of combustibles, each spray pattern of water must be from one length of fire hose and each must be from a separate outlet. In all other spaces at least one spray pattern of water must be from one length of fire hose.

(c) No outlet on a fire hydrant may point above the horizontal.

(d) Each fire hydrant must have at least one spanner and at least one fire hose rack or reel.

§ 108.425 Fire hoses and associated equipment.

(a) Each length of fire hose in a fire main system must be—

(1) Of 1½ or 2½ inch nominal hose size diameter;

(2) Of 50 foot nominal hose size length; and

(3) Lined commercial fire hose that meets Standard 19 of the Underwriters' Laboratories, Inc., (1971 edition) or Federal Specification ZZ-H-451f.

(b) Each fire hose coupling must—

(1) Be made of brass, bronze, or material that has corrosion resistant properties at least equal to those of brass or bronze; and

(2) Have 9 National Standard Fire-hose Coupling (NSFC) threads per inch for 1½ inch hose or 7½ NSFC threads per inch for 2½ inch hose.

(c) Each nozzle for a fire hose in a fire main system must be a combination solid stream and water spray fire hose nozzle that is approved under Subpart 162.027 of this chapter.

(d) A low velocity spray applicator approved under Subpart 162.027 of this chapter is required at each fire hydrant serving—

(1) Machinery spaces containing oil fired boilers, internal combustion machinery or oil fuel units; and

(2) Helicopter decks.

§ 108.427 International shore connection.

A fire main system on a unit in international service must have—

(a) at least one international shore connection that meets the requirements in Subpart 162.034 of this Chapter;

(b) a cutoff valve and check valve for each connection; and

(c) facilities available enabling the connection to be used on either side of the unit.

§ 108.429 Fire main system protection.

(a) Each pipe and fire hydrant in a fire main system must be installed to the extent practicable in locations that are not exposed to damage by materials that are moved on or onto the deck.

(b) Each part of the fire main system located on an exposed deck must either be protected against freezing or be fitted with cutout valves and drain valves to shut off and drain the entire exposed system in freezing weather.

Fixed Carbon Dioxide Fire Extinguishing Systems

§ 108.431 CO_2 systems: general.

(a) Sections 108.431 through 108.457 apply to high pressure carbon dioxide fire extinguishing systems.

(b) Low pressure systems, that is, those in which the carbon dioxide is stored in liquid form at low temperature, must be approved by the Commandant.

§ 108.433 Quantity of CO_2: general.

Each CO_2 system must have enough gas to meet the quantity requirements of § 108.439 for the space requiring the greatest amount of CO_2.

§ 108.435 CO_2 for enclosed ventilation systems for rotating electrical equipment.

(a) The number of pounds of CO_2 required for the initial charge to protect enclosed ventilation systems for rotating electrical equipment must be equal to the gross volume measured in cubic feet of the system divided by—

(1) 10 systems having a volume less than 57 cubic meters (2,000 cubic feet), or

(2) 12 for systems having a volume of 57 cubic meters (2,000 cubic feet) or more.

(b) In addition to the CO_2 required for the intial charge, the system must have enough CO_2 for delayed charges to maintain at least a 25 percent concentration until the equipment can be stopped, unless the initial charge is enough to maintain a 25 percent concentration.

§ 108.437 Pipe sizes and discharges rates for enclosed ventilation systems for rotating electrical equipment.

(a) The minimum pipe size for the initial charge must meet table 108.441 and the discharge of the required amount of CO_2 must be completed within 2 minutes.

(b) The minimum pipe size for the delayed discharge must be at least 1.25 centimeters (½ inch) standard pipe.

(c) The pipe used for the initial discharge must not be used for the delayed discharge, except systems having a volume of less than 57 cubic meters (2,000 cubic feet).

§ 108.439 Quantity of CO_2 for protection of spaces.

(a) The number of pounds of CO_2 required to protect a space must be equal to the gross volume of the space divided by the appropriate factor from Table 108.439.

(b) If a machinery space includes a casing, the gross volume of the space may be calculated using the reductions allowed in 46 CFR 95.10-5(e).

(c) If fuel can drain from a space to an adjacent space or if two spaces are not entirely separate, the requirements for both spaces must be used to determine the amount of CO_2 to be provided and the CO_2 system must be arranged to discharge into both spaces simultaneously.

TABLE 108.439.—*CO_2 Supply Factors*

[Gross volume of space in cubic feet]

Over	Not over	Factor
0	500	15
500	1,600	16
1,600	4,500	18
4,500	50,000	20
50,000		22

§ 108.441 Piping and discharge rates for CO_2 systems.

(a) The size of branch lines to spaces protected by a CO_2 system must meet Table 108.441.

(b) Distribution piping within a space must be proportioned from the supply line to give proper distribution to the outlets without throttling.

(c) The number, type, and location of discharge outlets must distribute the CO_2 uniformly throughout the space.

TABLE 108.441.—*CO_2 System Pipe Size*

CO_2 supply in system, kilograms (pounds)	Minimum pipe size (inches), millimeters (inches)
45 (100)	12.7 (½).
104 (225)	19.05 (¾).
136 (300)	25.4 (1).
272 (600)	31.75 (1¼).
450 (1,000)	38.10 (1½).
1,110 (2,450)	50.80 (2).
1,130 (2,500)	63.5 (2½).
2,023 (4,450)	76.2 (3).
3,229 (7,100)	88.9 (3½).
4,750 (10,000)	101.6 (4).
6,818 (15,000)	114.3 (4½).

(d) The total area of all discharge outlets must be more than 35 percent and less than 85 percent of the nominal cylinder outlet area or the area of

the supply pipe, whichever is smaller. The nominal cylinder outlet area in square centimeters is determined by multiplying the factor 0.0313 by the number of kilograms of CO_2 required. (The nominal cylinder outlet area in square inches is determined by multiplying the factor 0.0022 by the number of pounds of CO_2 required). The nominal cylinder outlet area must not be less than 71 square millimeters (0.110 square inches).

(e) A CO_2 system must discharge at least 85 percent of the required amount within 2 minutes.

§ 108.443 Controls and valves.

(a) At least one control for operating a CO_2 system must be outside the space or spaces that the system protects and in a location that would be accessible if a fire occurred in any space that the system protects. Control valves must not be located in a protected space unless the CO_2 cylinders are also in the protected space.

(b) A CO_2 system that protects more than one space must have a manifold with a stop valve, the normal position of which is closed, that directs the flow of CO_2 to each protected space.

(c) A CO_2 system that protects only one space must have a stop valve installed between the cylinders and the discharge outlets in the system, except on a system that has a CO_2 supply of 136 kilograms (300 pounds) or less.

(d) At least one of the control stations in a CO_2 system that protects a machinery space must be as near as practicable to one of the main escapes from that space.

(e) All distribution valves and controls must be of an approved type.

(f) Each CO_2 system that has a stop valve must have a remote control that operates only the stop valve and must have a separate remote control for releasing the required amount of CO_2 into the space protected by the system.

(g) Each CO_2 system that does not have a stop valve must be operated by a remote control that releases the required amount of CO_2 into the space protected by the system.

(h) Remote controls to each space must be in an enclosure.

(i) Each system must have a manual control at its cylinders for releasing CO_2 from the cylinders, except that if the system has pilot cylinders, a manual control is not required for other than pilot cylinders.

(j) If gas pressure is used to release CO_2 from a system having more than 2 cylinders, the system must have at least 2 pilot cylinders to release the CO_2 from the remaining cylinders.

(k) If the entrance to a space containing the CO_2 supply or controls of a CO_2 system has a lock, the space must have a key to the lock in a break-glass type box that is next to and visible from the entrance.

§ 108.445 Alarm and means of escape.

(a) Each CO_2 system that has a supply of more than 136 kilograms (300 pounds) of CO_2, except a system that protects a tank, must have an alarm that sounds for at least 20 seconds before the CO_2 is released into the space.

(b) Each audible alarm for a CO_2 system must have the CO_2 supply for the system as its source of power and must be in a visible location in the spaces protected.

§ 108.447 Piping.

(a) Each pipe, valve, and fitting in a CO_2 system must have a bursting pressure of at least 420 kilograms per square centimeter (6,000 pounds per square inch).

(b) All piping for a CO_2 system of nominal size of 19.05 millimeters (¾ inch) inside diamater or less must be at least Schedule 40 (standard weight) and all piping of nominal size over 19.05 millimeters (¾ inch) inside diameter must be at least Schedule 80 (extra heavy).

(c) Each pipe, valve, and fitting made of ferrous materials in a CO_2 system must be protected inside and outside from corrosion.

(d) Each CO_2 system must have a pressure relief valve set to relieve between 168 and 196 kilograms per square centimeter (2,400 and 2,800 pounds per square inch) in the distribution manifold or other location that protects the piping when all branch line shut off valves are closed.

(e) The end of each branch line in a CO_2 system must extend at least 50 millimeters (2 inches) beyond the last discharge outlet and be closed with a cap or plug.

(f) Piping, valves, and fittings in a CO_2 system must be securely supported and protected from damage.

(g) Each CO_2 system must have drains and dirt traps located where dirt or moisture can accumulate in the system.

(h) Discharge piping in a CO_2 system may not be used for any other purpose except as part of a fire detection system.

(i) Piping in a CO_2 system that passes through accommodation spaces must not have drains or other openings within these spaces.

§ 108.449 Piping tests.

(a) Each test prescribed in (b), (c), and (d) of this section must be performed upon completion of the piping installation.

(b) When tested with CO_2 or other inert gas under a pressure of 70 kilograms per square centimeter (1000 pounds per square inch), with no additional gas introduced into the system, the leakage in the piping from the cylinders to the stop valves in the manifold must not allow a pressure drop of more than 10.5 kilograms per square centimeter (150 pounds per square inch) per minute for a 2 minute period.

(c) When tested with CO_2 or other inert gas under a pressure of 42 kilograms per square centimeter (600 pounds per square inch), with no additional gas introduced into the system, the leakage in each branch line must not allow a pressure drop of more than 10.5 kilograms per square centimeter (150 pounds per square inch) per minute for a 2-minute period. The distribution piping must be capped within the protected space.

(d) Small independent systems protecting emergency generator rooms, lamp lockers and similar small spaces need not meet the tests prescribed in paragraphs (a) and (b) of this section if they are tested by blowing out the piping with air at a pressure of at least 7 kilograms per square centimeter (100 pounds per square inch).

§ 108.451 CO_2 storage.

(a) Except as provided in paragraph (b) of this section, each cylinder of a CO_2 system must be outside each space protected by the system and in a location that would be accessible if a fire occurred in any space protected by the system.

(b) A CO_2 system that has a CO_2 supply of 136 kilograms (300 pounds) or less may have one or more cylinders in the space protected by the system if the space has a heat detection system to activate the system automatically in addition to the remote and manual controls required by this subpart.

(c) Each space that contains cylinders of a CO_2 system must be ventilated and designed to prevent an ambient temperature of more than 54° C. (130° F.)

(d) Each cylinder in a CO_2 system must be securely fastened, supported, protected from damage, in an accessible location, and capable of removal from that location.

(e) Each unit must have a means for weighing cylinders of a CO_2 system.

(f) A cylinder in a CO_2 system may not be mounted in a position that is inclined more than 30° from a vertical position, except that a cylinder having flexible or bent siphon tubes may be mounted in a position that is inclined up to 80° from the vertical. The bottom of each cylinder when mounted must be at least 5 centimeters (2 inches) from the deck.

(g) If a cylinder does not have a check valve on its independent cylinder discharge, it must have a plug or cap to close the outlet when the cylinder is moved.

(h) Each CO_2 system cylinder must be made, tested, and marked in accordance with 46 CFR 147.04-1.

§ 108.453 Discharge outlets.

Each discharge outlet must be of an approved type.

§ 108.455 Enclosure openings.

(a) Mechanical ventilation for spaces protected by a CO_2 system must be designed to shut down automatically when the system is activated.

(b) Each space that is protected by a CO_2 system and that has natural ventilation must have a means for closing that ventilation.

(c) Each space protected by a CO_2 system must have the following means for closing the openings to the space from outside the space:

(1) Doors, shutters, or dampers for closing each opening in the lower portion of the space.

(2) Doors, shutters, dampers or temporary means such as canvas or other material normally on board a unit may be used for closing each opening in the upper portion of the space.

§ 108.457 Pressure release.

Each air tight or vapor tight space, such as a paint locker, that is protected by a CO_2 system must have a means for releasing pressure that accumulates within the space if CO_2 is discharged into the space.

Halongenated Gas Extinguishing System

§ 108.458 General.

Halongenated gas extinguishing systems may be installed if approved by the Commandant.

FOAM EXTINGUISHING SYSTEMS

§ 108.459 Number and location of outlets.

(a) A foam extinguishing system in a space must have enough outlets to spread a layer of foam of uniform thickness over the deck or bilge areas of the space.

(b) A foam extinguishing system in a space that has a boiler on a flat that is open to or can drain into a lower portion of the space must have enough outlets to spread a layer of foam of uniform thickness over the—

(1) Flat; and

(2) Deck or bilge areas of the space.

(c) A foam extinguishing system for a tank must have enough outlets to spread a layer of foam of uniform thickness over the surface of the liquid in the tank.

§ 108.461 Coamings.

Each machinery flat in a space that has a foam extinguishing system must have coamings that are high enough to retain spilled oil and foam on the flat on all openings except deck drains.

§ 108.463 Foam rate: Protein.

(a) If the outlets of a protein foam extinguishing system are in a space, the foam rate at each outlet must be at least 6.52 liters per minute for each square meter (.16 gallons per minute for each square foot) of area covered by the systems.

(b) If the outlets of a protein foam extinguishing system are in a tank, the foam rate at each outlet must be at least 4.07 liters per minute for each square meter (.1 gallon per minute for each square foot) of liquid surface in the tank.

§ 108.467 Water supply.

The water supply of a foam extinguishing system must not be the water supply of the fire main system on the unit unless when both systems are operated simultaneously—

(a) The water supply rate to the foam production equipment meets the requirements of this section; and

(b) Water supply rate to the fire hydrants required by § 108.415 of this subpart allows compliance with the pressure requirement in that section.

§ 108.469 Quantity of foam producing materials.

(a) Except as provided in paragraph (b) of this section, each foam extinguishing system with outlets—

(1) In a tank must have enough foam producing material to discharge foam for at least 5 minutes at each outlet; and

(2) in a space must have enough foam producing material to discharge foam for at least 3 minutes at each outlet.

(b) If a foam system has outlets in more than one tank or space, the system need have only enough foam producing material to cover the largest space that the system covers or, if the liquid surface of a tank covered by the system is larger, the tank with the largest liquid surface.

§ 108.471 Water pump.

Each water pump in a foam extinguishing system must be outside each machinery space in which the system has outlets and must not receive power from any of those spaces.

§ 108,473 Foam system components.

(a) Each foam agent, each tank for a foam agent, each discharge outlet, each control, and each valve for the operation of a foam extinguishing system must be approved by the Commandant.

(b) Each foam agent tank and each control and valve for the operation of a foam extinguishing system with outlets in a space must be outside the space and must not be in a space that may become inaccessible if a fire occurs in the space.

(c) Each control for a foam extinguishing system with outlets in a space must be near a main escape from the space.

§ 108.474 Aqueous film forming foam systems.

Aqueous film forming foam systems may be installed if approved by the Commandant.

§ 108.475 Piping.

(a) Each pipe, valve, and fitting in a foam extinguishing system must meet the applicable requirements in Subchapter F of this chapter.

(b) Each pipe, valve, and fitting made of ferrous material must be protected inside and outside from corrosion.

(c) Each pipe, valve, and fitting must have support and protection from damage.

(d) Each foam extinguishing system must have enough—

(1) Dirt traps to prevent the accumulation of dirt in its pipes; and

(2) Drains to remove liquid from the system.

(e) Piping in a foam extinguishing system must be used only for discharging foam.

§ 108.477 Fire hydrants.

(a) If a fixed foam extinguishing system has outlets in a main machinery space, at least 2 fire hydrants, in addition to the fire hydrants required by § 108.423 of this subpart, must be installed outside the entrances to the space with each at a separate entrance.

(b) Each hydrant must have enough hose to spray any part of the space.

(c) Each hydrant must have a combination nozzle and applicator.

FIRE PROTECTION FOR HELICOPTER FACILITIES

§ 108.486 Helicopter decks.

At least two of the accesses to the helicopter landing deck must each have a fire hydrant on the unit's fire main system located next to them.

§ 108.487 Helicopter deck fueling operations.

(a) Each helicopter landing deck on which fueling operations are conducted must have a fire protection system that discharges protein foam or aqueous film forming foam.

(b) a system that only discharges foam must—

(1) Have enough foam agent to discharge foam continuously for at least 5 minutes at maximum discharge rate;

(2) Have at least the amount of foam agent needed to cover an area equivalent to the swept rotor area of the

largest helicopter for which the deck is designed with foam at—

(i) If protein foam is used, 6.52 liters per minute for each square meter (.16 gallons per minute for each square foot) of area covered for five minutes;

(ii) If aqueous film forming foam is used, 4.07 liters per minute for each square meter (.1 gallons per minute for each square foot) of area covered for five minutes; and

(3) Be capable of discharging from each hose at 7 kilograms per square centimeter (100 pounds per square inch) pressure—

(i) A single foam stream at a rate of at least 340 liters (90 gallons) per minute; and

(ii) A foam spray at a rate of at least 190 liters (50 gallons) per minute.

(c) Each system must have operating controls at each of its hose locations, be protected from icing and freezing, and be capable of operation within 10 seconds after activation of its controls.

(d) Each system must have at least one hose at each of the two access routes required by § 108.235(f) of this Part. Each hose must be reel mounted and long enough to cover any point on the helicopter deck. Each hose that discharges foam must have a nozzle that has foam stream, foam spray, and off positions.

§ 108.489 Helicopter fueling facilities.

(a) Each helicopter fueling facility must have a fire protection system that discharges one of the following agents in the amounts prescribed for the agents over the area of the fuel containment systems around marine portable tanks, fuel transfer pumps and fuel hose reels:

(1) Protein foam at the rate of 6.52 liters per minute for each square meter (.16 gallons per minute for each square foot) of area covered for five minutes.

(2) Aqueous film forming foam at the rate of 4.07 liters per minute for each square meter (.1 gallon per minute for each square foot) of area covered for five minutes.

(3) 22.5 kilograms (50 pounds) of dry chemical (B–V semi-portable) for each fueling facility of up to 27.87 square meters (300 square feet).

(b) If the fire protection system required by § 108.487 of this subpart is arranged so that it covers both a helicopter fueling facility and a landing deck, the system must have the quantity of agents required by this section in addition to the quantity required by § 108.487.

Hand Portable and Semiportable Fire Extinguishing Systems

§ 108.491 General.

Each hand portable and semiportable fire extinguisher on a unit must be approved under Subpart 162.028 or 162.039 of this chapter.

§ 108.493 Location.

(a) Each unit must have the hand portable and semiportable fire extinguishers prescribed in Table 108.495(a) of this subpart and installed in the locations prescribed in the table.

(b) Each portable and semi-portable fire extinguisher must be visible and readily accessible.

(c) The location, size, and number of each portable and semiportable fire extinguisher on a unit must be acceptable to the appropriate OCMI. The OCMI may require extinguishers in addition to those prescribed in Table 108.495(a) if he considers them necessary for fire protection on the unit.

(d) Each hand portable and semiportable fire extinguisher that has a nameplate which states that it is to be protected from freezing, must be located where freezing temperatures do not occur.

§ 108.495 Spare charges.

(a) Each unit must have enough spare charges for 50 percent of the hand portable fire extinguishers required under Table 108.495(a) of this subpart that are rechargeable by personnel on the unit.

(b) If a unit has extinguishers that cannot be recharged by personnel on unit, it must also have at least one spare extinguisher for each classification and variety of those extinguishers.

TABLE 108.495(a).—*Hand Portable Fire Extinguishers and Semiportable Fire-Extinguishing Systems*

Space	Classification (see table 108.495(b))	Quantity and location
SAFETY AREAS		
Wheelhouse and control room	C-I	2 in vicinity of exit.
Stairway and elevator enclosure		None required.
Corridors	A-II	1 in each corridor not more than 150 ft (45 m) apart. (May be located in stairways.)
Lifeboat embarkation and lowering stations		None required.
Radio room	C-I	2 in vicinity of exit.
ACCOMMODATIONS		
Staterooms, toilet spaces, public spaces, offices, lockers, small storerooms, and pantries, open decks, and similar spaces.		None required.
SERVICE SPACES		
Galleys	B-II or C-II	1 for each 2,500 ft² (232 m²) or fraction thereof suitable for hazards involved.
Paint and lamp rooms	B-II	1 outside each room in vicinity of exit.
Storerooms	A-II	1 for each 2,500 ft ² (232 m²) or fraction thereof located in vicinity of exits, either inside or outside the spaces.
Work shop and similar spaces	C-II	1 outside each space in vicinity of an exit.
MACHINERY SPACES		
Oil-fired boilers: Spaces containing oil-fired boilers, either main or auxiliary, or their fuel oil units.	B-II	2 required in each space.
	B-V	1 required in each space.
Internal combustion or gas turbine propelling machinery spaces.	B-II	1 for each 1,000 brake horsepower but not less than 2 nor more than 6 in each space.
	B-III	1 required in each space. See note 1.
Motors or generators of electric propelling machinery that do not have an enclosed ventilating system.	C-II	1 for each motor or generator.
Motors and generators of electric propelling machinery that have enclosed ventilating systems.		None required.
AUXILIARY SPACES		
Internal combustion engines or gas turbine	B-II	outside the space containing engines or turbines in vicinity of exit.
Electric emergency motors or generators	C-II	1 outside the space containing motors or generators in vicinity of exit.
Steam driven auxiliary machinery		None required.
Trunks to machinery spaces		Do.
Fuel tanks		Do.
MISCELLANEOUS AREAS		
Helicopter landing decks	B-V	1 at each access route.
Helicopter fueling facilities	B-IV	1 at each fuel transfer facility. See note 2.
Drill floor	C-II	2 required.
Cranes with internal combustion engines	B-II	1 required.

NOTE.—1. Not required where a fixed gas extinguishing system is installed.
2. Not required where a fixed foam system is installed in accordance with sec. 108.489 of this subpart.

TABLE 108.495(b)

	Classification: Type and size	Water liters (gallons)	Foam liters (gallons)	Carbon dioxide kilograms (pounds)	Dry chemical kilograms (pounds)	Halon 1211 kilograms (pounds)
A	II	9.5 (2½)	9.5 (2½)		2.25 (5) [3]	
B	I		4.7 (1¼)	1.8 (4)	0.9 (2)	1.1 (2½)
B	II		9.5 (2½)	6.7 (15)	4.5 (10)	4.5 (10) [5]
B	III		45.5 (12)	15.8 (35)	9.0 (20)	
B	IV		7.6 (20)	22.5 (50)	13.5 (30)	
B	V		152 (40)	45 (100) [4]	22.5 (50) [4]	
C	I			1.8 (4)	0.9 (2)	
C	II			6.7 (15)	4.5 (10)	
C	III			15.8 (35)	9.0 (20)	
C	IV			22.5 (50)	13.5 (30)	

NOTE 1.—Fire extinguisher are designed by type as follows: (a) "A" for fires in conbustible materials such as wood. (b) "B" for fires in flammable liquids and greases. (c) "C" for fires in electrical equipment.

2.—Fire extinguishers are designated by size where size "I" is the smallest and size "V" is the largest. Sizes "I" and "II" are hand-portable extinguishers and sizes "III", "IV", and "V" are semiportable extinguishers.

3.—Must be specifically approved as a type A, B, or C extinguisher.

4.—For outside use, double the quantity of agent that must be carried.

5.—For outside use only.

MISCELLANEOUS FIREFIGHTING EQUIPMENT

§ 108.497 Fireman's outfits.

Each unit must have at least 2 fireman's outfits. Each fireman's outfit on a unit must consist of—

(a) A self-contained breathing apparatus approved under § 160.011 of this chapter;

(b) A three-cell, explosion proof flashlight with the Underwriter's Laboratories, Inc., label and set of spare batteries for the flashlight;

(c) An oxygen and explosive meter with the Underwriter's Laboratories, Inc. label or the Factory Mutual label;

(d) A lifeline that—

(1) Is attached to the self-contained breathing apparatus;

(2) Is made of bronze wire rope, inherently corrosion resistant steel wire rope, or galvanized or tinned steel wire rope;

(3) Is made up of enough 15.2 meters (50 foot) or greater lengths of wire rope to permit use of the outfit in any location on the unit;

(4) Has each end fitted with a hook with a 16 millimeters (⅝ inch) throat opening for the keeper; and

(5) Has a minimum breaking strength of 680 kilograms (1,500 pounds).

(e) Boots and gloves that are made of rubber or other electrically nonconductive material;

(f) A helmet that meets the requirements in ANSI standard Z-89.1-1969; and

(g) Clothing that protects the skin from scalding steam and the heat of fire and that has a water resistant outer surface.

§ 108.499 Fire axes.

Each unit must have at least two fire axes.

Subpart E—Lifesaving Equipment

§ 108.501 Survival capsule.

For the purposes of this subchapter, the term lifeboat includes survival capsules.

§ 108.503 Lifeboats.

(a) Each unit with 30 persons or less allowed on board must have at least one lifeboat. Each unit with more than 30 persons allowed on board must have at least two lifeboats. The total number of lifeboats on a unit must accommodate all personnel on board.

(b) Each lifeboat on a unit must be approved under Subpart 160.035 of this chapter.

(c) Each lifeboat on a unit must be motor propelled and have a permanently installed rigid enclosure of international orange that provides protection from exposure and fire during operation of the lifeboat.

(d) Each lifeboat on a unit must have the equipment required by § 94.20-10 of this Chapter for a lifeboat on an ocean or coastwise vessel other than a seagoing barge, except that the following equipment is not required:

(1) Ditty bag.

(2) Lantern if the lifeboat has equivalent interior lighting.

(3) Illuminating oil, if the lifeboat does not carry a lantern.

(4) Protecting cover.

(e) In addition to the equipment listed in paragraph (d), the following equipment is not required for each lifeboat on a unit which is not in international service:

(1) Condensed milk.

(2) Oars.

(3) Storm oil.

(4) Provisions.

(5) Rowlocks.

(f) Each lifeboat must have a list of the equipment it is required to carry. Except for boat hooks, the equipment and list must be securely stowed in the lifeboat. The equipment required by paragraph (d) must meet the requirements of § 94.20-15 of this Chapter.

(g) Each unit must have a manual for each lifeboat containing the following detailed information:

(1) Instructions for launching the lifeboat.

(2) Instructions for operating the lifeboat, its accessories, and its equipment.

(3) Maintenance and repair instructions.

(4) Schedule of periodic maintenance.

(5) Diagram of lubrication points with recommended lubricants.

(6) List of replaceable parts.

(7) List of sources of repair parts.

(8) Log of records of inspections and maintenance.

§ 108.505 Liferafts.

(a) Each unit must have enough inflatable liferafts to accommodate at least 100% of the persons allowed on board.

(b) Each inflatable liferaft on a unit must—

(1) be approved under Subpart 160.051 of this chapter as an inflatable liferaft intended for an ocean service vessel; and

(2) have a carrying capacity of not less than 6 nor more than 25 persons.

(c) Lifeboats in addition to those required by § 108.503 may be substituted for inflatable liferafts.

§ 108.506 Lifeboat and liferaft launching capability.

(a) Each lifeboat and liferaft on a surface type unit must be capable of

being launched to the water at the minimum operating draft when the unit has an adverse list up to 15° or trim up to 10°.

(b) Each lifeboat and liferaft on a non-surface type unit must be capable of being launched to the water at the maximum operating height above the water when the unit has an adverse list and trim, the amount of which is determined by the characteristics of the unit.

(c) Each liferaft on a unit which is launched from a position more than 3 meters (10 ft.) above the water must be davit launched.

§ 108.507 Launching equipment for lifeboats.

(a) Each unit must have the following launching equipment for each lifeboat:

(1) Mechanical disengaging apparatus that is approved under Subpart 160.033 of this chapter.

(2) Gravity davits that are approved under Subpart 160.032 of this chapter.

(3) A winch that is approved under Subpart 160.015 of this chapter.

(4) A means to hold the lifeboat steady in a location that allows the full complement to board the boat prior to launching.

(5) Wire falls that are—

(i) Equal or superior to 6 x 19 regular lay filler wire, pre-lubricated during construction;

(ii) Not more than 2 part falls; and

(iii) Designed to have a minimum breaking strength of at least six times the maximum working load.

(6) Blocks, if necessary to allow the falls to lead freely from the drum of the winch, that—

(i) Have sheaves each with a diameter measured from the base of the groove in the sheave that is at least 12 times as large as the diameter of the fall passing over the sheave;

(ii) Have a means to lubricate the moving parts of the blocks; and

(iii) Are designed to have a minimum breaking strength of at least six times the maximum working load.

(b) The lowering mechanism for the lifeboat must be operative from the lifeboat and from the unit.

(c) Each exposed wire fall on a unit must have a cover or means of protection from damage or fouling.

(d) The winch controls on the unit must be located where the operator can observe the lifeboat launching.

§ 108.508 Launching equipment for davit launched inflatable liferafts.

(a) Each unit must have the following launching equipment at each launching station:

(1) Winches that are approved by the Commandant (G-MMT).

(2) Mechanical disengaging apparatus that is approved by the Commandant (G-MMT).

(3) Davits that are approved by the Commandant (G-MMT).

(4) Load bearing components that meet §§ 108.507(a)(5), 108.507(c), and 108.509.

(5) A means to hold the liferaft in a location that allows a person to enter the liferaft.

(6) A means to rapidly retrieve the falls if the station has more than one liferaft.

(b) The launching equipment must be capable of being operated by a person in the liferaft and a person on the unit.

(c) The winch controls on the unit must be located where the operator can observe the liferaft launching.

(d) The launching equipment must be arranged so that a loaded liferaft does not have to be lifted before it is lowered.

(e) Not more than two liferafts may be launched from the same set of launching equipment.

§ 108.509 Wire fall fleet angle.

(a) "Fleet angle" is the angle made by two lines that intersect at the center of the sheave. One line is perpendicular to the axis of the drum and the other passes through either end of the drum at its axis.

(b) The portion of a wire fall between the drum of a winch on a unit and the first sheave over which the wire fall passes must have a fleet angle that is less than 8 degrees if the drum is a grooved drum and less than 4 degrees if the drum is a nongrooved drum.

§ 108.510 Hydrostatic releases.

Each inflatable liferaft that is not intended for davit launching must have—

(a) A hydrostatic release approved under Subpart 160.062 of this chapter; or

(b) A means to ensure that the liferaft will float free if the unit sinks.

§ 108.511 Lifeboat and liferaft arrangement.

The lifeboats and liferafts on a unit must be arranged—

(a) To provide ready access to them;

(b) So that a fire or other casualty does not immobilize all lifeboats and liferafts;

(c) So that they are accessible for inspection, maintenance, and testing;

(d) In locations clear of overboard discharge lines, propellers, and hull obstructions; and

(e) In locations to launch as designed.

§ 108.514 Life preservers.

(a) Each unit must have enough adult life preservers for 125% of the persons allowed on board.

(b) Each unit must have lockers, boxes, closets, shelves, or racks in readily accessible locations in berthing areas, watch stations, or other work areas for the stowage of life preservers. The stowage containers must not be capable of being locked.

(c) Each life preserver on a unit must be approved under Subpart 160.002, 160.005, or 160.055 of this chapter as a Type I—personal flotation device.

(d) Each life preserver on a unit must have a whistle that is—

(1) Of a ball-type;

(2) Corrosion resistant; and

(3) Attached to the life preserver by a 1 meter (3 foot) lanyard that—

(i) Does not have hooks, snaps, clips, or other metal connecting devices;

(ii) Allows the whistle to extend at least 38 centimeters (15 inches) from the top of the life preserver; and

(iii) Is coiled and bound with breakable thread.

§ 108.515 Ring life buoys.

(a) Each unit must have at least eight ring life buoys and mounting racks.

(b) Each ring life buoy on a unit must—

(1) Have a mounting rack that secures the buoy and allows it to be easily removed from the rack;

(2) Be approved under Subpart 160.009 or 160.050 of this chapter.

(c) At least four ring life buoys on a unit must each have a waterlight attached to the buoy by a 1 to 2 meters (3 to 6 foot) lanyard. Each waterlight must be approved under Subpart 161.012 of this chapter.

(d) At least two ring life buoys that have water light must each—

(1) Have a smoke signal approved under Subpart 160.057 of this chapter that self-activates when the ring life buoy is released from its mounting rack;

(2) Have a releasing mechanism that can be operated from the bridge, except that if the bridge is not continuously manned the mechanism must be capable of operation from a location authorized by the OCMI; and

(3) Be mounted in a location where the buoy, if released by the releasing mechanism, will drop into the water.

(e) At least one ring life buoy on each side of the unit, excluding those required by paragraph (d), must have a buoyant line attached to the buoy that is 1½ times the distance from the buoy to the design waterline of the unit or 15 fathoms in length, whichever is greater. The end of the line must not be secured to the unit.

(f) Each ring life buoy on a unit must be readily accessible to persons on board.

§ 108.517 Line throwing appliance.

(a) Each unit on an international voyage must have at least one impulse projected rocket type line throwing appliance that is approved under Subpart 160.040 of this chapter.

(b) Each unit not on an international voyage must have—

(1) An impulse projected rocket type line throwing appliance that is approved under Subpart 160.040 of this chapter; or

(2) A shoulder type line throwing gun approved under Subpart 160.031 of this chapter.

§ 108.519 Portable radio apparatus.

Each unit on an international voyage must have a portable radio apparatus that meets the requirements of the Federal Communications Commission.

§ 108.521 Distress signals.

(a) Each unit must have at least 12 hand held, rocket-propelled, parachute, red flare, distress signals. Each distress signal on a unit must be approved under Subpart 160.036 of this chapter.

(b) Each distress signal must be stowed in a portable, watertight, and noncorrosive container on the bridge or, if the unit does not have a bridge, in the control room.

§ 108.523 EPIRB.

Each self-propelled unit must have an Class A emergency position indicating radio beacon (EPIRB). Each EPIRB on a unit must be approved under Subpart 161.011 of this chapter.

§ 108.525 Means of embarkation.

(a) Except as provided in paragraph (c), each unit must have a chain suspension ladder approved under subpart 160.017 of this chapter for each lifeboat and liferaft launching station.

(b) Each chain suspension ladder must extend to the unit's lightwaterline the unit at a 15 degree list away from the side where the ladder is installed.

(c) If a chain suspension ladder cannot be supported against a vertical flat surface, a fixed ladder must be installed; however no more than four fixed ladders are required.

(d) Each inclined fixed ladder must—

(1) be at least 71 centimeters (28 inches) wide; and

(2) have a pitch of 50° or less.

(e) Each vertical fixed ladder must meet the requirements of § 108.160 for Fixed Ladders, except that vertical bars in cages must be open at least 50 centimeters (20 inches) on one side for the length of the ladder.

§ 108.527 Additional means of abandonment.

Portable slides, safety booms, moveable ladders, elevators, and other means of abandonment may be installed if approved by the Commandant.

Subpart F—Cranes and Power Operated Industrial Trucks

CRANES

§ 108.601 Crane design.

(a) Each crane and crane foundation on a unit must be designed in accordance with the American Petroleum Institute Specification for Offshore Cranes, API Spec. 2C, Second Edition, February, 1972 (with supplement 2).

(b) In addition to the design requirements of paragraph (a), each crane must have the following:

(1) Each control marked to show its function.

(2) Instruments with built-in lighting.

(3) Fuel tank fills and overflows that do not run onto the engine exhaust.

(4) No gasoline engines.

(5) Spark arrestors fitted on engine exhaust pipes.

POWER OPERATED INDUSTRIAL TRUCKS

§ 108.611 Power operated industrial trucks: definition.

For the purposes of § 108.613 through § 108.615, "power industrial truck" means a tractor, lift truck, or specialized industrial truck used for material handling on a unit.

§ 108.613 Power operated industrial trucks.

(a) Each power operated industrial truck used on a unit must have a type designation as follows:

(1) "E"—electrically powered trucks that have safeguards against inherent sources of ignition.

(2) "EE"—electrically powered trucks that have the requirements for "E" trucks, and completely enclosed electric motors and equipment.

(3) "EX"—electrically powered trucks whose electrical fittings and equipment are designed, constructed, and assembled to permit the trucks to be used in atmospheres containing flammable vapors or dusts.

(4) "D"—diesel powered trucks that have safeguards against inherent sources of ignition.

(5) "DS"—diesel powered trucks that are provided with safeguards to the exhaust, fuel, and electrical systems not provided on a "D" truck.

(b) Each power operated industrial truck used on a unit must be approved and designated by a testing laboratory listed in paragraph (c) of this section.

(c) The following testing laboratories are accepted for the purposes of this section:

(1) Underwriters' Laboratories, Inc., P.O. Box 247, Northbrook, Illinois, 60092.

(2) Factory Mutual Laboratories Engineering Division, 1115 Boston Providence Turnpike, Norwood, Massachusetts 02062.

(d) Each power operated industrial truck used on a unit must have at least the following safety features:

(1) A warning device that can be heard above normal background noises.

(2) A driver's overhead guard if, during normal operations, the operator may be exposed to falling objects.

(3) If the truck has a fork lift—

(i) A vertical load back rest extension or rack to prevent the load from falling toward the driver when the mast is in a position of maximum backward tilt;

(ii) A means of securing the forks to the carriage to prevent unintentional lifting of the toe;

(iii) A means of securing fork extensions and other attachments to prevent lifting or displacement on the primary forks; and

(iv) A factor of safety for the forks of at least three to one, based on the elastic limit of the fork material.

(4) Guards on each exposed wheel to prevent the wheel from throwing particles at the operator.

(5) Steering controls that are—

(i) Within the clearances of the truck; or

(ii) Guarded so that movement of the controls will not result in injury to the operator when the truck is passing an obstruction.

(e) A steering knob may be mounted within the perimeter of the wheel, if used on a steering mechanism that allows the wheel to spin as a result of road action. The steering knob must be—

(1) A mushroom type that engages the palm of the operator's hand; or

(2) Arranged in some other manner to prevent injury to the operator.

§ 108.615 Charging facilities for battery powered industrial trucks.

Each supply or charging circuit for charging batteries of powered industrial trucks must be connected to the truck by a portable plug that is—

(a) Break away type; and

(b) Connected to the charging outlet so that any movement of the truck away from the charging station—

(1) Breaks the connection;

(2) Does not expose any live parts to contact with a conducting surface or object; and

(3) Does not allow the plug to fall on to the deck.

Subpart G—Equipment Markings and Instructions

§ 108.621 Equipment markings: general.

Unless otherwise provided, each marking required in this subpart must be—

(a) Printed in English;

(b) In red letters with a contrasting background;

(c) Permanent;

(d) Easy to be seen;

(e) At least 1.3 centimeters (½ inch) in height.

§ 108.623 General alarm bell switch.

Each general alarm bell switch must be marked "GENERAL ALARM" on a plate or other firm noncorrosive backing.

§ 108.625 General alarm bell.

Each general alarm bell must be identified by marking "GENERAL ALARM—WHEN BELL RINGS GO TO YOUR STATION" next to the bell.

§ 108.627 Carbon dioxide alarm.

Each carbon dioxide alarm must be identified by marking: "WHEN ALARM SOUNDS VACATE AT ONCE. CARBON DIOXIDE BEING RELEASED" next to the alarm.

§ 108.629 Fire extinguishing system branch line valve.

Each branch line valve of each fire extinguishing system must be marked with the name of the space or spaces it serves.

§ 108.631 Fixed fire extinguishing system controls.

(a) Each cabinet or space that contains a valve, control, or manifold of a fixed fire extinguishing system must be marked by one of the following: "CARBON DIOXIDE FIRE APPARATUS", "FOAM FIRE APPARATUS", or "WATER SPRAY FIRE APPARATUS" in letters at least 5 centimeters (2 inches) high.

(b) Instructions for the operation of a fixed fire extinguishing system must be posted next to a fire apparatus described in paragraph (a) of this section.

§ 108.633 Fire stations.

Each fire station must be identified by marking: "FIRE STATION NO. —" next to the station in letters and numbers at least 5 centimeters (2 inches) high.

§ 108.635 Self-contained breathing apparatus.

Each locker or space containing self-contained breathing apparatus must be marked: "SELF CONTAINED BREATHING APPARATUS".

§ 108.636 Work vests.

Each space containing a work vest must be marked: "WORK VEST".

§ 108.637 Hand portable fire extinguishers.

(a) Each hand portable fire extinguisher must be marked with a number that identifies it in relation to all other hand portable fire extinguishers.

(b) The location of each hand portable fire extinguisher must be marked with the same number that is marked on the extinguisher.

§ 108.639 Emergency lights.

Each emergency light must be marked: "E".

§ 108.641 Instructions for changing steering gear.

Instructions stating, in order, the different steps to be taken for changing to emergency and secondary steering gear must be posted in the steering gear room and at each secondary steering station in 1.3 centimeters (½ inch) letters and numerals of contrasting color to the background.

§ 108.643 Rudder orders.

At each steering station, the direction which the wheel or steering device must be moved for right rudder or left rudder must be marked in letters of contrasting color to the background on the wheel or steering device or in a place that is directly in the helmsman's line of vision to indicate "RIGHT RUDDER" and "LEFT RUDDER".

§ 108.645 Lifeboats.

(a) The bow of each lifeboat must be marked in letters and numbers of contrasting color to the background with—

(1) The name and port of registry of the unit in letters at least 7.5 centimeters (3 inches) high;

(2) The number of the boat in numbers at least 7.5 centimeters (3 inches) high; and

(3) The number of persons allowed in the boat in letters and numbers at least 4 centimeters (1½ inches) high.

(b) Each mechanical disengaging apparatus control lever must be colored red with the following marked on or next to the lever: "DANGER-LEVER DROPS BOAT" or "DANGER-LEVER RELEASES HOOKS".

(c) The location of each mechanical disengaging apparatus control lever located at or below seat level must be marked by a band of color contrasting to its surroundings approximately 30 centimeters (12 inches) wide from the keel to each side bench. Each mechanical disengaging apparatus control located above seat level must be on a background that contrasts with its red color.

§ 108.647 Inflatable liferafts.

Each inflatable liferaft must be identified by marking: "INFLATABLE LIFERAFT NO. — . . . . PERSONS CAPACITY" on a sign next to the liferaft or its container—

(a) in letters at least 4 centimeters (1½ inches) high; and

(b) in a contrasting color to the background.

§ 108.649 Life preservers and ring life buoys.

(a) Each life preserver must be marked in a color in contrast to the life preserver with the unit's name.

(b) Each locker box or closet used for stowing life preservers must be marked "LIFE PRESERVERS".

(c) Each ring life buoy must be marked in a color in contrast to the ring lifebuoy with the unit's name and port of registry.

§ 108.651 Portable magazine chests.

Each portable magazine chest must be marked: "PORTABLE MAGAZINE CHEST — FLAMMABLE — KEEP LIGHTS AND FIRE AWAY" in letters at least 7.5 centimeters (3 inches) high.

§ 108.653 Helicopter facilities.

(a) Each helicopter fueling facility must be marked adjacent to the fueling hose storage: "WARNING — HELICOPTER FUELING STATION — KEEP LIGHTS AND FIRE AWAY".

(b) Each storage tank for helicopter fuel must be marked: "DANGER — FLAMMABLE LIQUID".

(c) Each access to a helicopter landing area must be marked: "BEWARE OF TAIL ROTOR".

(d) Each marking required by this section must be in letters at least 7.5 centimeters (3 inches) high.

§ 108.655 Lifeboat and liferaft instructions.

Placards approved by the Commandant that contain instructions for launching lifeboats and liferafts and inflating inflatable liferafts must be conspicuously posted.

§ 108.657 Unit markings.

The hull of each unit must be marked in accordance with Parts 67 and 69 of this chapter.

§ 108.659 Breeches buoy and lifesaving signal instructions.

Instructions on Form CG-811 for the use of breeches buoys and lifesaving signals must be posted so that they can be easily seen in the pilothouse or control room, engine room, each messroom, and each recreation room.

§ 108.661 Unit markings: draft marks.

(a) Each unit must have draft marks for each foot of immersion—

(1) If the unit is a surface unit, on both the port and starboard sides of the stem and the stern-post or rudder-post or at any other place at the stern of the unit as may be necessary for easy observance;

(2) If the unit is a self-elevating unit, near each corner of the hull but not more than 4 required; and

(3) If the unit is a column-stabilized unit, on each corner column, continuing to the footing or lower displacement hull.

(b) The bottom of each mark must be at the draft indicated by that mark.

(c) Each mark must be—

(1) In numerals 15 centimeters (6 inches) high; and

(2) In contrasting color to the background.

(d) For the purposes of this section, "draft" means the distance from the bottom of the keel or the lowest shell plate on the outer surface of the unit to the surface of the water, except that where a unit has a permanent appendage extending below the bottom of the keel, "draft" means the distance from the lowest part of the appendage to the surface of the water.

§ 108.663 Unit markings: load lines.

Each unit that is assigned a load line must have the load line marked in accordance with Part 42 of this Chapter.

§ 108.665 Appliances for watertight integrity.

Each watertight door, scuttle, and hatch required for watertight integrity, which may be opened during normal operations must be marked in letters of contrasting color to the background "KEEP CLOSED".

Subpart H—Miscellaneous Equipment

§ 108.697 Buoyant work vest.

Each buoyant work vest on a unit must be approved under § 160.053 of this Chapter.

§ 108.699 Substitution of life preservers.

A work vest may not be substituted for a required life preserver—

(a) For the life saving equipment requirements of this part; or

(b) For use during drills and emergencies.

§ 108.701 Sounding equipment.

Each self-propelled unit must have a mechanical or electronic sounding apparatus.

§ 108.703 Self-contained breathing apparatus.

(a) Each unit must have a self-contained breathing apparatus to be used as protection from gas leaking from a refrigeration unit.

(b) The self-contained breathing apparatus required in § 108.497 may be used for this purpose.

§ 108.705 Anchors, chains, wire rope, and hauser.

(a) Each unit must be fitted with anchors, chains, wire rope, and hausers in agreement with the standards established by the American Bureau of Shipping.

(b) Units which are equipped with anchors used as operational equipment are not required to have additional anchors if the operational anchors meet the requirements of paragraph (a).

§ 108.707 First aid kit.

Each unit must have a first-aid kit approved by the Mine Safety and Health Administration (Formerly Mining Enforcement and Safety Administration) of a size suitable for the number of persons allowed on board the unit that is stowed in a location that is accessible to persons on board.

§ 108.709 Litter.

Each unit must have a litter that is—

(a) Stowed in a location that is accessible to the persons on board; and

(b) Capable of being used on the type of helicopters serving the unit.

§ 108.711 Pilot ladders.

(a) Except as provided in paragraph (c), each unit which normally uses a pilot must have a pilot ladder in addition to the ladders required in § 108.525.

(b) Each unit which has a pilot ladder must have the following:

(1) Spreaders.

(2) A man rope.

(3) A safety line.

(c) A pilot ladder is not required if there is no flat vertical surface to support a pilot ladder.

(d) Illumination over the side of the unit and on the deck where the pilot boards the unit must be provided.

§ 108.713 International Code of Signals.

Each vessel on an international voyage which is required to carry a radiotelegraph or radiotelephone installation in accordance with Chapter IV of the Safety of Life at Sea Convention, 1960, must carry the International Code of Signals.

§ 108.715 Magnetic compass and gyrocompass.

(a) Each self-propelled unit in ocean or coastwise service must have a magnetic compass.

(b) Each self-propelled unit of 1,600 gross tons and over in ocean or coastwise service must have a gyrocompass in addition to the magnetic compass required in paragraph (a).

(c) Each unit that is required to have a gyrocompass must have an illuminated repeater for the gyrocompass that is at the main steering stand unless the gyrocompass is illuminated and is at the main steering stand.

§ 108.717 Radar.

Each self-propelled unit of 1,600 gross tons and over in ocean or coastwise service must have—

(a) A marine radar system for surface navigation; and

(b) Facilities on the bridge for plotting radar readings.

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APPENDIX A—Navigation and Vessel Inspection Circular—Inspection and Certification of Existing Mobile Offshore Drilling Units.

AUTHORITY: Sec. 2, 87 Stat. 418 (46 U.S.C. 86); sec. 3, 82 Stat. 341, as amended (46 U.S.C. 367); R.S. 4405, as amended (46 U.S.C. 375); sec. 10, 35 Stat. 428 (46 U.S.C. 395); R.S. 4423, as amended (46 U.S.C. 400); R.S. 4429, as amended (46 U.S.C. 407); R.S. 4430, as amended (46 U.S.C. 408); 88 Stat. 423 (46 U.S.C. 411); R.S. 4434, as amended (46 U.S.C. 412); R.S. 4462, as amended (46 U.S.C. 416); sec. 1, 73 Stat. 475 (46 U.S.C. 481); sec. 4, 67 Stat. 462 (43 U.S.C. 1333(d)); sec. 6(b)(1), 80 Stat. 937 (49 U.S.C. 1655(b)(1)); 49 CFR 1.46(b) and (n)(6).

Subpart A—General

§ 109.101 Applicability.

No unit may be operated unless it complies with the regulations in this part.

§ 109.103 Requirements of the International Convention for Safety of Life at Sea, 1960.

No self-propelled unit of more than 500 gross tons may embark on an international voyage unless it is issued the appropriate Convention certificate as described in §§ 107.401 through 107.413 of this Subchapter.

§ 109.107 Designation of master or person in charge.

The owner of a unit or his agent shall designate an individual to be the master or person in charge of the unit.

§ 109.109 Responsibilities of master or person in charge.

(a) The master or person in charge shall—

(1) Ensure that the provisions of the Certificate of Inspection are adhered to; and

(2) Be fully cognizant of the provisions in the operating manual required by § 109.121.

(b) Nothing in this subpart shall be construed as limiting the master or person in charge, at his own responsibility, from diverting from the route prescribed in the Certificate of Inspection or taking such steps as he deems necessary and prudent to assist vessels in distress or for other emergency conditions.

§ 109.121 Operating manual.

(a) An operating manual must be prepared for each unit.

(b) Each operating manual must be approved by the Commandant (G-MMT).

(c) The operating manual must contain guidance for the safe operation of the unit under normal and emergency conditions.

(d) The operating manual must contain the following information:

(1) A general description of the unit, including lightship data.

(2) Data for each operating mode, including design loading, wave height, and draft.

(3) General arrangement showing watertight compartments, closures, vents, permanent ballast, and allowable deck loadings.

(4) Hydrostatic curves or equivalents.

(5) Capacity plan showing capacities of tanks, center of gravity, free surface corrections, and instructions for applying them.

(6) Instructions for the operation of the unit while—

(i) Preparing for the passage of a severe storm, including the specific actions and approximate length of time necessary to attain each level of preparedness; and

(ii) Change of operating condition, including preparations prior to making a move.

(7) Stability information setting forth maximum KG versus draft curve, or other parameters, based upon compliance with the intact and damaged stability criteria.

(8) Examples of loading conditions for each mode of operation, and a means for evaluation of other loading conditions.

(9) Inherent limitations of operation for each operating mode.

(10) General guidance and precautions regarding unintentional flooding.

(11) A table of contents and index for the manual.

Subpart B—Tests, Drills, and Inspections

§ 109.201 Steering gear, whistles, general alarm, and means of communication.

The master or person in charge shall ensure that—

(a) Steering gear, whistles, general alarm bells, and means of communication between the bridge or control room and the engine room on self propelled units are inspected and tested—

(1) Within 12 hours before getting under way; and

(2) At least once each week if under way or on station; and

(b) Whistles and general alarm bells on all other units are inspected examined and tested at least once each week.

§ 109.203 Sanitation.

(a) The master or person in charge shall insure that the accommodation spaces are in a clean and sanitary condition.

(b) The chief engineer, or engineer in charge if no chief engineer is required, shall insure that the engineering spaces are in a clean and sanitary condition.

§ 109.205 Inspection of boilers and machinery.

The chief engineer or engineer in charge, before he assumes charge of the boilers and machinery of a unit shall inspect the boilers and machinery, other than industrial machinery, and report to the master or person in charge and the Officer in Charge, Marine Inspection, any parts that are not in operating condition.

§ 109.207 Line-throwing equipment.

(a) The master or person in charge shall insure that personnel are instructed in the use of line-throwing equipment.

(b) The master or person in charge shall insure that each line throwing appliance is tested by firing it at least once every four months. The use of a service line is not required for test firing.

§ 109.208 EPIRB.

The master or person in charge shall insure that each EPIRB required in § 108.523 of this subchapter is tested monthly using the integrated test circuit and output indicator.

§ 109.209 Appliances for watertight integrity.

(a) Before getting underway, the master or person in charge shall insure that each appliance for watertight integrity is closed and watertight.

(b) If existing conditions warrant, the master or person in charge may permit appliances for watertight integrity to be open while afloat.

§ 109.211 Testing of emergency lighting and power systems.

(a) The master or person in charge shall insure that—

(1) each emergency lighting and each emergency power system is tested at least once each week;

(2) each emergency generator is tested at least once each month by operating it under load for at least 2 hours; and

(3) each storage battery for emergency lighting and power systems is tested every six months under actual connected load for a period of at least 2 hours.

(b) After the 2 hour test period required in paragraph (a)(3) of this section, the voltage values under load or specific gravity of electrolyte must be measured. Measured values must be extrapolated to approximate the values that would result following a 12 hour test period. The test must be extended if a trend cannot be determined to allow extrapolation. The capacity of the battery corresponding to the extrapolated values of voltage or specific gravity must be sufficient to supply the actual connected load.

§ 109.213 Fire drill.

The master or person in charge shall conduct a fire drill at least once each week and shall insure that—

(a) All personnel report to their stations, and demonstrate their ability to perform the duties assigned to them in the station bill;

(b) Each fire pump is started;

(c) Each item of rescue and safety equipment is brought from the emergency equipment lockers; and

(d) Each watertight door which is in use while the unit is underway is operated.

§ 109.215 Boat drill.

The master or person in charge shall conduct a boat drill at least once each week, and shall insure that—

(a) All personnel report to their stations, and demonstrate their ability to perform the duties assigned to them in the station bill;

(b) Each lifeboat is prepared for use;

(c) Weather permitting, at least one lifeboat is partially lowered, and its engine started and operated; and

(d) Each person not assigned duties in the station bill is instructed in the use of life preservers.

§ 109.217 Lifeboats and lifeboat launching equipment: Inspection and testing.

The master or person in charge shall insure that—

(a) Each lifeboat is lowered to the water launched and operated at least once each three months as part of a boat drill required by § 109.215;

(b) Each lifeboat is properly equipped;

(c) The motor of each motor propelled lifeboat is operated in the ahead and the astern position at least once each week;

(d) Each lifeboat is cleaned and inspected at least once each year;

(e) The fuel tank of each motor propelled lifeboat is emptied, and the fuel is changed at least once each year;

(f) Each rechargeable battery for each lifeboat radio is fully charged at least once each week; and

(g) Each lifeboat radio transmitter is tested at least once each week.

§ 109.219 Inflatable liferaft: Servicing.

The master or person in charge shall insure that each inflatable liferaft is serviced, every 12 months or not later than the next inspection for certification: *Provided*, The time since the date of the last servicing does not exceed 15 months. Except in emergency, no servicing may be done aboard the unit.

§ 109.221 Electric power operated winches.

(a) The master or person in charge shall insure that each lifeboat winch control apparatus, including motor controllers, emergency switches, master switches, and limit switches, is inspected at least once each 3 months.

(b) The inspection required in paragraph (a) of this section must include the removal of drain plugs from the electrical enclosures of each lifeboat winch control apparatus.

§ 109.223 Firefighting equipment.

The master or person in charge shall insure that each hand portable fire extinguisher, semi-portable fire extinguisher, and fixed fire-extinguishing system is tested and inspected at least once each twelve months.

Subpart C—Operation and Stowage of Safety Equipment

§ 109.301 Maintenance of equipment.

The master or person in charge shall insure that each item of lifesaving and firefighting equipment required by this subchapter is maintained in operative condition.

§ 109.305 Obstruction on launching decks.

The master or person in charge shall insure that each deck from which lifeboats are launched is kept clear of any obstruction that interferes with the immediate launching of lifeboats and liferafts.

§ 109.307 EPIRB.

The master or person in charge shall insure that—

(a) Each EPIRB required in § 108.523 is stowed in a manner so that it will float free if the unit sinks.

(b) Each battery of the EPIRB is replaced before the date marked on the EPIRB battery, or after the EPIRB is used.

§ 109.313 Stowage of life preservers.

The master or person in charge shall insure that each life preserver required in § 108.514 for each person assigned a berth, is stowed in his berthing area as provided in § 108.514(b), and that the remaining life preservers required in § 108.514(a) are stowed in each work area and watch station as provided in § 108.514(b).

§ 109.317 Replacement of distress signal and self-activated smoke signals.

The master or person in charge shall insure that each distress signal and self-activated smoke signal is replaced not later than 36 months after the date of manufacture or not later than the date of expiration, whichever date is marked on the signal.

§ 109.320 Line-throwing equipment.

The master or person in charge shall insure that—

(a) The line throwing equipment required by § 108.517 is stowed in a readily accessible location;

(b) The service life of rockets for impulse projected rocket type equipment is limited to a period of four years from the date of manufacture, and replacement of out-dated items made at the first arrival in the United States, except that replacement is made in all cases within twelve months after the date of expiration; and

(c) The line-throwing equipment is not operated in an explosive atmosphere.

§ 109.321 Portable radio.

The master or person in charge shall insure that the portable radio required in § 108.519 is—

(a) Stowed in the radioroom, bridge, or a protected location near a lifeboat; and

(b) Readily accessible for transfer to a lifeboat.

§ 109.323 Manning of lifeboats and inflatable liferafts.

The master or person in charge shall—

(a) Assign to each lifeboat and each inflatable liferaft to which seat assignments are made in the station bill—

(1) A licensed deck officer, able seaman, or certificated lifeboatman to command the lifeboat;

(2) A licensed deck officer, able seaman, or certificated lifeboatman as second in command, if the lifeboat has a capacity of more than 40 persons;

(3) A person who can operate the lifeboat's motor; and

(4) A person who can operate the portable radio, if the lifeboat has a portable radio; and

(b) Insure that the person assigned to command a lifeboat or inflatable liferaft has a list of the persons, by station bill number and job title, assigned to seats in the lifeboat or liferaft.

§ 109.325 Persons in command of lifeboats or liferafts.

A person assigned to command a lifeboat or liferaft shall insure that each person assigned to the lifeboat or liferaft can perform the duties assigned to that person.

§ 109.329 Fire pumps.

The master or person in charge shall insure that at least one of the fire pumps required in § 108.415 is ready for use on the fire main system at all times.

§ 109.331 Firehoses and hydrants.

The master or person in charge shall insure that—

(a) At least one length of firehose with a combination nozzle is connected to each fire hydrant required by this subchapter, at all times, except that during heavy weather a firehose in an exposed location may be temporarily removed from the fire hydrant and stowed in an accessible, nearby location;

(b) A fire hose required by this subchapter is not used for any purpose other than firefighting, fire drills, and testing;

(c) Access to each fire hydrant is not blocked;

(d) Each firehose, except a firehose temporarily removed from an exposed location, is stowed on a rack or reel required by this subchapter; and

(e) Each low velocity spray applicator for a fire hose nozzle is attached to the nozzle or stowed next to the fire hydrant to which the fire hose is attached.

§ 109.333 Fire main cutoff valves.

The master or person in charge shall insure that each fire main cutoff valve is open and sealed to prevent closing, except that a cutoff valve may be closed to protect the portion of the fire main system on an exposed deck from freezing.

§ 109.334 Working over water.

The master or person in charge shall insure that each person working over the water is wearing a life preserver or a buoyant work vest.

§ 109.335 Stowage of work vests.

The master or person in charge shall insure that no work vest is stowed where life preservers are stowed.

§ 109.337 Fireman's outfit.

The master or person in charge shall insure that—

(a) At least 2 persons who are trained in the use of the fireman's outfit are on board at all times; and

(b) Each fireman's outfit and its spare equipment is stowed in a separate and accessible location.

(c) A fireman's outfit is not used for any purpose other than fire fighting except as provided in § 108.703.

§ 109.339 Location of fire axes.

The master or person in charge shall insure that the fire axes required in § 108.499 of this subchapter are located in the enclosures for fire hoses marked in accordance with § 108.633 of this subchapter, if the fire axes are not located in plain view.

§ 109.341 Chain suspension ladders.

The master or person in charge shall insure that each chain suspension ladder required in § 108.525(a) of this subchapter is—

(a) Kept ready for immediate use; and

(b) Stowed near the lifeboat or inflatable liferaft davits.

§ 109.343 Pilot ladders and equipment.

The master or person in charge shall insure that—

(a) The equipment required in § 108.711(b) is kept available for use with the pilot ladder required in § 108.711(a); and

(b) One ring buoy with a waterlight is available for use when a pilot boards the unit.

§ 109.345 Pilot ladder use.

The master or person in charge shall insure that—

(a) A pilot ladder, when in use, is secured so that each step rests firmly against the side of the unit;

(b) A pilot boards a unit by means of an accommodation ladder or personnel transfer equipment if a pilot ladder is not used.

Subpart D—Reports, Notifications, and Records

REPORTS AND NOTIFICATIONS

§ 109.411 Notice of casualty.

(a) The owner, agent, master, or person in charge of a unit that is involved in a marine casualty shall notify the Officer in Charge, Marine Inspection, as soon as possible after the casualty occurs, if the casualty involves any of the following:

(1) Actual physical damage to property in excess of $5,000.00.

(2) An occurrence affecting the seaworthiness or efficiency of the unit, such as fire, flooding, failure of a fixed fire protection system, or any failure of primary lifesaving equipment.

(3) Stranding or grounding of the unit, except when the unit is grounded to conduct normal operations.

(4) Loss of life.

(5) Injury causing any person to require hospitalization for more than 24 hours, or to be incapacitated for more than 72 hours.

(b) The notice required by this section must contain the following:

(1) Name and official number of the unit.

(2) Name of the owner or agent of the unit.

(3) Description of the casualty, including cause.

(4) Location of the unit at the time of the casualty.

(5) Nature and extent of injury to persons.

(6) Damage to property.

(c) The notice required by this section is not required to be submitted if the written report of casualty required by § 109.413 is submitted without delay.

§ 109.413 Written report of casualty.

The master or person in charge of a unit for which a report of casualty is made under § 109.411 shall submit a report to the Officer in Charge, Marine Inspection, as soon as possible after the casualty occurs, on—

(a) Form CG-924E if the casualty involves injury to persons or loss of life; and

(b) Form CG-2692 if the casualty involves damage to property or grounding or stranding of a vessel except when the unit is grounded to conduct normal operations.

§ 109.415 Retention of records after casualty.

(a) The owner, agent, master, or person in charge of a unit for which a report of casualty is made under § 109.411 shall insure that all records maintained on the unit are retained on board the unit for at least 3 months after the report of casualty is made or until advised by the Officer in Charge, Marine Inspection, that records need not be retained on board.

(b) The records which must be retained in accordance with paragraph (a) of this section include:

(1) Rough and smooth deck log.
(2) Rough and smooth engine room log.
(3) Tour reports.
(4) Bell books.
(5) Navigation charts in use at the time of casualty.
(6) Navigation work books.
(7) Compass deviation cards.
(8) Gyrocompass records.
(9) Storage plans.
(10) Record of drafts.
(11) Notices to mariners.
(12) Radiograms sent and received.
(13) The radio log.
(14) Personnel list.
(15) Crane record book.

(c) The owner, agent, master, or person in charge shall, upon request, make the records described in this section available for examination by any Coast Guard official authorized to investigate the casualty.

§ 109.417 Report of damage to aid to navigation.

If a unit collides with an aid to navigation maintained by the Coast Guard, the master or person in charge shall report the collision to the appropriate Officer in Charge, Marine Inspection.

§ 109.419 Report of unsafe machinery.

If a boiler, unfired pressure vessel, or other machinery on a unit is unsafe to operate, the master or person in charge shall report the existence of the unsafe condition to the Officer in Charge, Marine Inspection.

§ 109.421 Report of repairs to boilers and pressure vessels.

Before making repairs, except normal repairs and maintenance such as replacement of valves or pressure seals, to boilers or unfired pressure vessels in accordance with § 50.05-10 of this chapter, the master or person in charge shall report the nature of the repairs to the Officer in Charge, Marine Inspection.

§ 109.423 Report of breaking safety valve seal.

(a) If a required seal on a boiler safety valve is broken, the chief engineer or engineer in charge shall notify the Officer in Charge, Marine Inspection.

(b) The notice must—

(1) State the reason for breaking the seal; and
(2) Request that the valve be examined and adjusted.

§ 109.425 Repairs and alterations: Emergency equipment.

(a) Before making repairs or alterations, except emergency repairs or alterations, to lifesaving, fire detecting or extinguishing equipment, the master or person in charge shall report the nature of the repairs or alterations to the Officer in Charge, Marine Inspection.

(b) When emergency repairs or alterations to lifesaving, fire detecting or fire extinguishing equipment have been made, the master or person in charge shall report the nature of the repairs or alterations to the Officer in Charge, Marine Inspection.

RECORDS

§ 109.431 Logbook.

(a) The master or person in charge of a unit that is required by 46 U.S.C. 201 to have an official logbook shall maintain the logbook on Form CG-706. When the voyage is completed, the master or person in charge shall file the logbook with the Officer in Charge, Marine Inspection.

(b) The master or person in charge of a unit that is not required by 46 U.S.C. 201 to have an official logbook, shall maintain, on board, an unofficial logbook for making the entries required by this subpart. This logbook must be retained on board until the unit's next reinspection or inspection for certification.

§ 109.433 Logbook entries.[1]

The master or person in charge shall insure that the following applicable entries are made in the logbook required by this subpart:

(a) The date of each test of the steering gear, whistle, general alarm, and communications equipment and the condition of the equipment.

(b) The time and date of each opening and closing, while the unit is afloat, of each required appliance for watertight integrity not fitted with a remote operating control or alarm system and the reasons for the action.

(c) The date of each test of emergency lighting and power systems and the condition and performance of the equipment.

(d) the following information pertaining to each fire drill:

(1) Date and hour of each drill.
(2) Duration of each drill.
(3) The condition of all fire fighting equipment, watertight door mechanisms, and valves used during each drill.

(e) The following information pertaining to each boat drill:

(1) Date and hour of each drill.
(2) Duration of each drill.
(3) The number of each lifeboat swung out during each drill.
(4) The number of each lifeboat lowered during each drill.
(5) Length of time that each motor propelled lifeboat was operated during each drill.
(6) The condition of lifesaving equipment used during each drill.

(f) The date of the lifeboat equipment examination required in § 109.217 of this part.

(g) If a drill required in § 109.213 or § 109.215 is not held, the reasons for not holding the drill.

(h) If a drill required in § 109.213 or § 109.215 is not completed, the reasons for not completing the drill, and the date and a description of the incomplete drill.

(i) The date of each lifeboat winch inspection required in § 109.221 and the condition of the winch.

(j) Prior to getting underway, the fore and aft drafts, the position of the loadline marks in relation to the surface of the water, and the density of the water in which the vessel is floating, if in fresh or brackish water.

(k) The date of each inspection of each accommodation space.

(l) The date of each inspection required in § 109.573 if performed by the master or person in charge.

(m) The date of each test firing of the line throwing equipment required by § 109.207.

§ 109.435 Record of fire fighting equipment inspection.

(a) The master or person in charge shall ensure that a record of each test and inspection required in § 109.223 is maintained on board, until the unit is reinspected or inspected for certification.

(b) The record required in paragraph (a) of this section must show—

(1) The date of each test and inspection;
(2) The number or other identification of each item of equipment tested or inspected; and
(3) The name of the person, and the company he represents if any, who conducts the test or inspection.

§ 109.437 Crane record book.

The master or person in charge shall ensure that the following are maintained in a crane record book:

(a) Descriptive information which will identify each crane including—

[1] NOTE.—R. S. 4290 (46 U.S.C. 201) requires that certain entries be made in an official logbook, in addition to the entries required by this section; and R. S. 4291 (46 U.S.C. 202) prescribes the manner of making those entries.

(1) The API name plate data required by Section 11 of API Spec. 2C, Second Edition, February 1972; and

(2) The rates load chart for each line reeving and boom length which may be utilized.

(b) Information required by Section 3 of the American Petroleum Institute *Recommended Practice for Operation and Maintenance of Offshore Cranes*, API RP 2D, First Edition (October 1972) with supplement 1.

(c) Dates and results of frequent inspections and tests required in paragraph (b) of this section.

(d) Dates and results of periodic inspections and tests required in paragraph (b) of this section.

(e) Date and result of each rated load test.

(f) Date and description of each replacement or renewal of wire rope, hooks, and other load components.

(g) Date and description of each failure of the crane, or any component or safety feature.

(h) Date and description of each repair to the crane structure, boom, or equipment.

§ 109.439 Crane certificates.

The master or person in charge shall insure that the following certificates and records for each crane are maintained on the unit:

(a) Each certificate issued by a crane certifying authority.

(b) Each record and original certificate, or certified copy of a certificate, or manufacturers or testing laboratories, companies or organizations for—

(1) Loose gear;

(2) Wire rope; and

(3) The annealing of wrought iron gear.

Subpart E—Station Bill

§ 109.501 Station bill: Duties of personnel.

(a) The station bill must set forth the duties and station of each person during emergencies, including an assigned seat in a lifeboat or liferaft for each person on the unit.

(b) The duties must, as far as possible, be comparable with the regular work of the individual.

(c) These duties must include:

(1) Closing airports, watertight doors, scuppers, and sanitary and other discharges that lead through the unit's hull.

(2) Stopping fans and ventilating systems.

(3) Operating all safety equipment.

(4) Preparing lifeboats and life rafts for launching.

(5) Extinguishing fires.

(6) Warning personnel of the emergency.

(7) Instructing all personnel on use and wearing of their life preservers.

(8) Directing personnel to appointed stations.

(9) Carrying the portable radio apparatus, required in § 108.519, to a lifeboat.

§ 109.503 Station bill: Emergency signals.

(a) The station bill must set forth signals that—

(1) Call personnel to their stations; and

(2) Direct personnel at their stations.

(b) Emergency stations signals are established as follows:

(1) The signal to man emergency stations is a rapid succession of short soundings of both the general alarm bell and the whistle, if a whistle is installed, for a period of not less than 10 seconds.

(2) The signal to secure from emergency stations is the sounding of both the general alarm bell and the whistle, if a whistle is installed, three times.

(c) The abandon unit stations signals are established as follows:

(1) The signal to man abandon unit stations is a continuous sounding of both the general alarm and the whistle, if a whistle is installed.

(2) If whistle signals are used to direct the handling of lifeboats, they must be—

(i) One short blast to lower lifeboats; and

(ii) Two short blasts to stop lowering the lifeboats.

(3) The signal to secure from abandon unit stations is the sounding of both the general alarm bell and the whistle, if a whistle is installed, three times.

§ 109.505 Station bill: General.

The master or person in charge shall—

(a) Ensure that the station bill is prepared and maintained;

(b) Sign the station bill;

(c) Ensure that the station bill is posted in conspicuous locations on the unit;

(d) Ensure that temporary personnel and visitors are advised of their emergency stations and assigned a seat in a lifeboat or liferaft upon their arrival aboard the unit; and

(e) Ensure that all persons on the unit are familiar with the station bill.

Subpart F—Cranes and Powered Industrial Trucks

§ 109.521 Cranes: General.

The master or person in charge shall ensure that each crane is operated and maintained in accordance with the API *Recommended Practice for Operation and Maintenance of Offshore Cranes*, API RP 2D, First Edition (Oct. 1972) with supplement 1.

§ 109.525 Cranes: Working loads.

The master or person in charge shall ensure that tables indicating the maximum safe working loads for the various working angles of the boom, where the boom is rated at varying capacities depending on the radius, and the maximum and minimum radius at which the boom may be safely used, are conspicuously posted near the controls and are visible to the operator when working the crane.

§ 109.527 Cranes: Operator designation.

(a) The master or person in charge shall designate, in writing, each crane operator.

(b) The master or person in charge shall ensure that only designated operators operate cranes.

(c) The master or person in charge shall ensure that each designated operator is familiar with the provisions of the API *Recommended Practice for Operation and Maintenance of Offshore Cranes*, API RP 2D, First Edition (Oct. 1972) with supplement 1.

§ 109.529 Powered industrial trucks: Use.

The master or person in charge shall ensure that—

(a) Only "EX" designated trucks are used in Class I, Division 1 locations; and

(b) Only "EE", "EX", or "DS" designated trucks are used in—

(1) Class I, Division 2 spaces; and

(2) In spaces that are within the periphery of a Class I, Division 1 space.

§ 109.531 Powered industrial trucks: Ventilated spaces.

The master or person in charge shall ensure that diesel powered industrial trucks are operated only in ventilated spaces.

§ 109.533 powered industrial trucks: Rated lifting capacity.

The master or person in charge shall ensure that the rated lifting capacity of each powered industrial truck is posted on each truck.

§ 109.535 Designated refueling areas for diesel powered industrial trucks.

The master or person in charge shall designate refueling areas for diesel powered industrial trucks only on—

(a) The weather deck; or

(b) In spaces that are—

(1) Ventilated to prevent accumulation of vapors; and

(2) Located at least 3 meters (10 feet) from a source of ignition.

§ 109.537 Refueling diesel powered industrial trucks: Operations.

The master or person in charge shall ensure that—

(a) Each diesel powered industrial truck is refueled only in a refueling area designated under § 109.535;

(b) Before a diesel powered industrial truck is refueled, its engine is stopped;

(c) If refueling operations are conducted in an enclosed space, no truck engine is operated in the space during refueling operations;

(d) Diesel powered industrial trucks are refueled from—

(1) A portable container of five gallons or less that has a self-closing spout; or

(2) If the refueling operation is on the weather deck, a pump with a hose that has a pistol grip, deadman nozzle; and

(e) Each designated refueling area has at least one four pound, dry chemical, portable fire extinguisher available during refueling operations.

§ 109.539 Recharging battery powered industrial trucks.

The master or person in charge shall ensure that batteries of powered industrial trucks are charged only in a ventilated area and not in a Class I location.

Subpart G—Miscellaneous

§ 109.555 Propulsion boilers.

The master or person in charge and the engineer in charge shall ensure that--

(a) Steam pressure does not exceed that allowed by the certificate of inspection; and

(b) Except as provided in § 109.423, the safety valves, once set and sealed by the inspector, are not tampered with or made inoperative.

§ 109.557 Flammable and combustible liquids: Carriage.

The master or person in charge shall ensure that—

(a) Flammable and combustible liquids in bulk are not carried, except as allowed by endorsement to the Certificate of Inspection;

(b) Portable tanks are handled and stowed in accordance with Subparts 98.30 and 98.35 of this chapter, and the provisions of 49 CFR Parts 171, 172, 173, 176, and 178 which are applicable to portable tanks; and

(c) Grades B and lower liquids are—

(1) Authorized, by the Commandant, to be carried; and

(2) Carried only in fixed independent or integral tanks.

§ 109.558 Stores and supplies.

The master or person in charge shall ensure that dangerous articles, substances, and combustible liquids which are used on board a unit, except those used in industrial operations and as fuel for the unit's machinery, are accepted, handled, stowed, and used only in accordance with the provisions for cargo vessels in Part 147 of this Chapter.

§ 109.559 Explosives and radioactive materials.

Except as authorized by the master or person in charge, no person may use explosives or radioactive materials and equipment on a unit.

§ 109.563 Posting of documents.

The master or person in charge shall ensure that the following are posted under glass in the pilot house or control center:

(a) General arrangement plans for each deck showing—

(1) Each fire retardant bulkhead;

(2) Each fire detecting, manual alarm, and fire extinguishing system;

(3) Each fire door;

(4) Each means of ingress to compartments; and

(5) Each ventilating system, including the location of each damper, fan, and remote means of stopping the fans.

(b) The stability letter issued by the Coast Guard.

(c) Each SOLAS and Coast Guard certificate issued to the unit.

§ 109.564 Maneuvering characteristics.

(a) The master or person in charge of each self-propelled unit of 1,600 gross tons and over shall ensure that a maneuvering information fact sheet is prominently displayed in the pilothouse.

(b) For surface type units, the maneuvering information in Part 97.19 of this chapter must be displayed.

(c) The maneuvering information requirements for column stabilized, self-elevating, and other units of unusual design will be specified on a case by case basis.

§ 109.565 Charts and nautical publications.

The master or person in charge of a self-propelled unit shall ensure that the unit has the following adequate, up to date, and appropriate items for the intended voyage:

(a) Charts.

(b) Sailing directions.

(c) Coast pilots.

(d) Light lists.

(e) Notices to mariners.

(f) Tide Tables.

(g) Current Tables.

(h) All other nautical publications necessary.[1]

§ 109.573 Riveting, welding, and burning operations.

Except as allowed by this section—

(a) the master or person in charge shall ensure that there is no riveting, welding, or burning—

(1) In a fuel tank;

(2) On the boundary of a fuel tank;

(3) On pipelines, heating coils, pumps, fittings, or other appurtenances connected to fuel tanks; or

(4) On the boundary of spaces adjacent to tanks carrying Grades A, B, or C flammable liquids in bulk.

(b) The operations prohibited in paragraph (a) of this section may be allowed if—

(1) An inspection conducted in accordance with the "Standard for the Control of Gas Hazards on Vessels to be Repaired," N.F.P.A. No. 306-1974, is made—

(i) In ports or navigable waters of the United States, its territories and possessions, by—

(A) A marine chemist certified by the National Fire Protection Association; or

(B) If a certified marine chemist is not available, a person designated by the Officer in Charge, Marine Inspection; or

(ii) In all other locations by—

(A) A marine chemist certified by the National Fire Protection Association;

(B) If a certified marine chemist is not available, a person designated by the Officer in Charge, Marine Inspection; or

(C) If the persons required in paragraph (b)(ii) (A) and (B) of this section are not available, the master or person in charge; or a welding supervisor designated, in writing, by the master or person in charge; and

(2) A certificate is issued by the person conducting the inspection stating—

(i) That he conducted the inspection in accordance with the standard in paragraph (b)(1) of this section;

(ii) The operations that may be conducted; and

(iii) A list of precautions to be followed during the operations;

(c) The master or person in charge shall ensure that the precautions in paragraph (b)(2)(iii) of this section are followed.

§ 109.575 Accumulation of liquids on helicopter decks.

The master or person in charge shall ensure that no liquids are allowed to accumulate on the helicopter decks.

§ 109.577 Helicopter fueling.

(a) The master or person in charge shall designate persons to conduct helicopter fueling operations.

(b) No person may be designated to conduct such operations unless he is familiar with the fueling procedures and safety precautions.

[1] NOTE.—For U.S. units in or on the navigable waters of the United States. See 33 CFR 164.33.

§ 109.581 Fixed ballast.

(a) The master or person in charge shall ensure that fixed ballast is not removed from the unit or relocated unless the removal or relocation is approved by the Commandant.

(b) Fixed ballast may be moved for examination or repair of the unit if done in the presence of a marine inspector.

§ 109.583 Prevention of oil pollution.

The master or person in charge shall ensure that the unit is operated to meet the requirements in—

(a) Section 311 of the Federal Water Pollution Control Act, as amended (86 Stat. 816; 33 U.S.C. 1321);

(b) Section 12 of the Oil Pollution Act, 1961, as amended (75 Stat. 404; 33 U.S.C. 1011); and

(c) 33 CFR Parts 151, 155 and 156.

§ 109.585 Use of auto pilot.

Except as provided in 33 CFR 164.15, when the automatic pilot is used in areas of high traffic density, conditions of restricted visibility, and all other hazardous navigational situations, the master or person in charge shall ensure that—

(a) It is possible to immediately establish manual control of the unit's steering;

(b) A competent person is ready at all times to take over steering control; and

(c) The changeover from automatic to manual steering and vice versa is made by, or under the supervision of, the officer of the watch.

APPENDIX A—NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 3-78

SUBJ: INSPECTION AND CERTIFICATION OF EXISTING MOBILE OFFSHORE DRILLING UNITS

1. *Purpose.* To promulgate instructions for the inspection and certification of existing mobile offshore drilling units. This NVC is also being published as appendix A of 46 CFR Subchapter IA.

2. *Background.* Mobile Offshore Drilling Units are recognized internationally through the Intergovernmental Maritime Consultative Organization as being a "special purpose ship" designed and operated to carry out an industrial function at sea. Contemporary U.S. Vessel regulations in Title 46 CFR do not adequately cover the safety considerations which are unique to the hull and structural designs, industrial equipment and operating procedures incorporated in drilling vessels. To provide appropriate and adequate standards, the Coast Guard with the assistance of the National Offshore Operations Advisory Committee, and following the provisions of the Administrative Procedures Act, developed Subchapter IA, Regulations for Mobile Offshore Drilling Units, 46 CFR Parts 107-109 and amendments to 46 CFR Subchapters "F", Marine Engineering Regulations, and "J", Electrical Engineering Regulations. These regulations, published in FEDERAL REGISTER (43 FR 56788 December 4, 1978) will apply to all units contracted for on or after the effective date of the regulations.

3. *Discussion.* a. This NVC elaborates the "grandfather provisions" of 46 CFR 107.211 and 107.215 in applying Subchapter IA to the approximately 150 *existing* ocean-going U.S. flag mobile offshore drilling units. "Existing" Mobile Offshore Drilling Units are those vessels which have been contracted for before the effective date of the regulations including:

(1) Units in Service.

(2) Units under construction.

(3) Units contracted for which are to be constructed and delivered prior to January 1, 1981.

b. Existing *uncertificated* mobile drilling units of which there are approximately 92 of the bottom bearing configuration, i.e., jack-up and submersible types, have not previously been required to comply with vessel inspection regulations. Some units have met the load line requirements of Subchapter "E" for International Voyages. Many of the older units are not classed by a classification society. Bottom bearing units operating on the Outer Continental Shelf of United States have been required to meet the safety requirements of 33 CFR Subchapter "N" as artificial islands. On January 3, 1979, existing bottom bearing units are subject to the "grandfather provisions" in paragraph 107.211(c) of Subchapter IA.

c. Existing *certificated* mobile offshore drilling units, for the purposes of this NVC, are column-stabilized and ship-shape types of which approximately 58 are currently certificated, or have made application for an original Certificate of Inspection or intend to make application for an original inspection for certification under 46 CFR Subchapter "I" on the basis of the unit being contracted for prior to the effective date of the new regulations. These units may continue to meet the structural, equipment, material and arrangement standards which were applicable to the hull, engineering, electrical and industrial systems when the units were contracted for. In addition they must meet the provisions of d.(1), d.(4)(d), d.(7)(b), d.(8), d.(9), d.(10)(b), d.(11) and d.(12) of paragraph 3 of this NVC in accordance with paragraph 107.215(c)(2) of Subchapter IA.

d. *Inspection Provisions for Existing Uncertificated Units.* The intent of the "grandfather" provisions of this NVC for existing uncertificated units is to ascertain through inspection that the material condition of the unit and its equipment meet reasonable levels of safety. To this end, the following determinations will be made:

- The design, construction and arrangements of the hull, machinery electrical and industrial systems do not reveal manifestly unsafe aspects.
- There is no excessive deterioration of the hull structure or equipment foundations.
- There are no intrinsic fire or explosion hazards.
- There are no personnel hazards such as unguarded moving machinery, potential electrical shock conditions or lack of handrails.
- The unit is seaworthy and exhibits satisfactory stability.

d.(1) *General.* (a) Repairs and minor alterations to hull structure or equipment may be made to the same standards as the original installation. However, new installations or major alterations which affect vessel or personnel safety shall meet the applicable standards of Subchapter IA.

(b) Existing items of safety equipment not meeting the applicable specifications or requirements set forth in Subchapter IA may be continued in service as long as they are maintained in good working order to the satisfaction of the OCMI. Such safety equipment and installations requiring extensive repairs shall be replaced and shall meet the applicable specifications and requirements of Subchapter IA.

(c) The OCMI has discretion to accept alternatives or equivalents which meet the established standards, and to give special consideration to departures from the regulations when it can be shown that special circumstances warrant such departures.

d.(2) *Plan Submittal.* (a) For units not classed by the American Bureau of Shipping or other recognized classification society, (see 46 CFR 108.109) the OCMI must have sufficient plans and information submitted to him which will describe such things as the unit's size, construction, configuration, arrangement of tanks, decks and spaces; and the machinery and electrical installation. In addition, the OCMI may require submittal of any additional data he considers necessary in order to proceed with the original inspections.

(b) For units classed by the American Bureau of Shipping or other recognized classification society, the plans and information described in Subchapter IA paragraphs 107.305 (a), (b), (v), and (ii) and a general description of the machinery and electrical installation shall be submitted to the OCMI for information. The OCMI may accept continued classification as proof of structural, mechanical, and electrical sufficiency. However, the OCMI may require additional plans and information if necessary.

d.(3) *Hull Structure.* (a) No structural changes will be required unless manifestly unsafe conditions exist.

(b) Existing uncertificated units must be drydocked or have a special examination in lieu of drydocking as required by 46 CFR, Section 107-261.

(c) Achievement of one compartment subdivision is not required where extensive modification of the original design would be necessary; however, watertight integrity of the hull and structural boundaries must be maintained. Bulkheads and decks designed to be watertight must be maintained as such where they are penetrated by pipes, electrical cable, reach rods, ventilation systems, etc.

d.(4) *Stability.* (a) The stability of each existing unit will be reviewed by the Coast Guard. The plans indicated in 46 CFR Subchapter IA paragraphs 107.305(q) through (u-1) must be submitted to the cognizant OCMI or Merchant Marine Technical Office.

(b) Lightship data from a Coast Guard witnessed and approved stability test is required for each existing, uncertificated unit. Alternatively other evidence of lightship values will be considered on a case by case basis.

(c) In general, compliance with the intact stability standards of 46 CFR Subchapter IA, Sections 108.303 through 108.309 is required. Where existing units were designed to a lesser standard of stability than that specified in §§ 108.303 through 108.309, some relaxation based on proven past performance may be granted at the discretion of the OCMI and limiting conditions, if any, set

forth in the operating manual. In no case will the minimum wind speed for adequate stability be reduced below 50 knots.

(d) An operating manual shall be prepared for each unit. Each operating manual must contain the information indicated in 46 CFR Subchapter IA, § 109.121(d) and be submitted to the cognizant OCMI or Merchant Marine Technical Office for review.

d. (5) *Load Line.* (a) All units are required to obtain and maintain a valid Load Line Certificate. The structure and stability of the unit must be proven adequate for the voyages and areas of operation intended.

(b) The American Bureau of Shipping or other recognized classification society will issue Load Line Certificates and conduct initial and annual load line surveys. Coast Guard and the American Bureau of Shipping inspections may be conducted simultaneously, but it is the owner's responsibility to arrange coordinated inspection schedules.

(c) The structural review conducted by the American Bureau of Shipping or other recognized classification society for load line assignment may be accepted by the Coast Guard as proof of structural adequacy of the hull.

(d) The stability review must be completed prior to issuance of a Load Line Certificate. The Coast Guard will inform the American Bureau of Shipping or other recognized classification society of the results of the stability review, and will indicate any stability limitations to be placed on the Load Line Certificate.

(e) Freeboard calculations for self-elevating units with barge type hulls will be made in accordance with 46 CFR, Part 42. The bow height requirements of 46 CFR 42.20-70 may be relaxed to approximately 33% of the normal requirement for barge shapes moving at speeds less than 6 knots. No relaxation of the addition to freeboard for deficiency in sheer is allowed. The freeboard for units other than self-elevating units with barge type hulls will be based upon compliance with the intact and damage stability standards applicable at the time the unit was contracted for.

(f) All units *delivered after the date of this NVC* regardless of contract date, must obtain a Load Line Certificate as soon as operationally feasible.

d. (6) *Route and Operating Area Limitations.* (a) Units classed by the American Bureau of Shipping or other recognized classification society for ocean service generally will be certificated by the Coast Guard for ocean routes.

(b) Unclassed units which have proven structural and stability adequacy by continued safe operation in a specific geographic area, such as the Gulf of Mexico, will be limited by the Certificate of Inspection and Load Line Certificate to that area. To qualify for an unlimited oceans route, such a unit must be reviewed for adequacy of the structure and stability by the Coast Guard and meet the Load Line requirements of d. (5) above.

(c) Any unit which intends to move or operate outside the geographical area indicated on the Certificate of Inspection must receive prior approval from the OCMI.

d. (7) *Fire Protection.* (a) *Structural fire protection.* All units must meet the provisions of Section 108.123, Insulation of Combustible Materials and Section 108.127, Storage Lockers for Combustibles. All existing interior stairways which are open at each end must be enclosed at one level. On units where wood was utilized in the construction of accommodation spaces, each space must be equipped with a smoke or heat detector either battery powered or operating on the AC power supply. All detectors must have the Underwriters Laboratories, Inc., label (UL) or the Factory Mutual Laboratories (FM) label.

(b) *Fire Extinguishing Systems.* Systems and equipment must be provided which will meet or be equivalent to the applicable specifications and provisions required by Subchapter IA. Installed fire extinguishing systems, which provide equivalent or greater protection than systems required by Subpart E, Subchapter IA may be continued in use as long as they are in good material condition and will function as designed. Where practicable, existing washdown systems may be utilized as the firemain. Where wood was utilized in the construction of accommodation spaces, the applicable reqirements of 46 CFR Subchapter IA, Table 108.495(a) should be doubled.

d. (8) *Lifesaving Equipment.* (a) Each unit must have lifesaving equipment (lifeboats and davit launched liferafts) for 200 percent of the total persons allowed on board. Except for submersible type units, the installation of lifeboats for 100 percent of the persons (on board) is required in accordance with 46 CFR Section 108.503 of Subchapter IA. Consideration will be given to those units where existing arrangement and structure do not provide sufficient room for installation of the lifeboats or where the added weight of the lifeboats, davits and winches will materially reduce the variable load capacity of the unit. In such cases, davit launched inflatable liferafts with a combined personnel capacity of the required lifeboats, and a rescue boat approved by the OCMI may be acceptable equivalents. Submersible type units may substitute Coast Guard approved throw over type inflatable liferafts and an approved rescue boat for the required lifeboats.

(b) For the second part of the total 200 percent primary lifesaving requirement, lifeboats installed in accordance with 33 CFR, Subchapter "N" Part 144 or Coast Guard approved life floats may be retained as provided for in 3.d(1)(b) of this Circular. They will be considered collectively with the Coast Guard approved liferafts for calculating the amount of equipment to provide for 100 percent of personnel on board.

(c) Adequate access to all lifesaving equipment must be provided.

d. (9) *Cranes.* (a) Plan approval will not normally be required of any crane which conforms to the specifications of the manufacturer as orginally installed. A rated load test as described in Section 107.260 of Subchapter IA will be required unless the crane has been load tested while under certification by an approved certifying authority as provided for in 46 CFR 107.258. Prior to the rated load test, the crane should be identified by manufacturer and model number to determine that the correct load rating chart is being used. The owner must submit to the OCMI details and calculations of any alterations to a crane which were accomplished without manufacturer's documentation in order to verify the rated load of the crane.

d. (10) *Electrical.* (a) Multiple power sources do not require an emergency generator; however, storage batteries or approved relay-controlled battery operated lanterns are required to be installed for the emergency lighting system and provide 12 hours of lighting.

(b) Electrical equipment installed in Class I, division 1 and 2 locations, as defined in Subchapter IA, Section 108.170 must be of a suitable type and in good material condition.

d. (11) *Unfired Pressure Vessels.* (a) Unfired pressure vessels built and stamped in accordance with Section VIII of the ASME Code may be continued in service as long as they remain in satisfactory condition. At the original and subsequent inspections for certification, ASME Code pressure vessels must be tested and examined in accordance with the requirements in 46 CFR 61.10-5.

(b) Unfired pressure vessels which cannot be identified as being constructed to any recognized standard may be continued in service provided that no obvious defects are noted. These pressure vessels shall be hydrostatically tested to one and one half times the working pressure. For pressure vessels that can not be reasonably hydrostatically tested, nondestructive testing may be used to verify the pressure vessels condition for continued serviceability. These pressure vessels will then be stamped with a Coast Guard identification number and periodically tested and examined in accordance with the requirements in 46 CFR 61.10-5.

d. (12) *Marine Sanitation Devices.* (a) All units must meet the provisions of 33 CFR Part 159, Coast Guard Marine Sanitation Devices Regulations. The discharge requirements are compatible with the OCS Orders of the U.S. Geological Survey.

4. *Action.* a. The owner of each *existing certificated* unit must provide the cognizant OCMI a proposed plan to accomplish the requirements in paragraph 3, c. of this NVC within 60 days from the effective date of the regulations. Most items should be approved at the unit's next inspection for certification; however, where major equipment installations are concerned, the owner may be allowed up to two years to comply with the requirements from the time the OCMI completes his assessment of the proposals.

b. *Application for Original Inspection for Certification.* Not later than sixty days from January 3, 1979, application for original inspection for certification of all *existing uncertificated units,* shall be submitted to the appropriate OCMI. The plans or descriptive data specified in paragraph 3.d(2) of this NVC along with a proposed plan to bring the unit into compliance should, if possible, be submitted with the application for inspection. If not feasible to assemble all required information in this time frame, an estimated date of submittal shall be indicated on the application. Arrangements should be made to commence the original inspection for certification with due consideration for the unit's operating situation.

c. To the extent possible the same inspection team will conduct the inspection of all existing uncertificated units in a geographical area. It may be advantageous to conduct the original inspection in conjunction with an impending special or periodic survey, drydocking or availability period. Units under construction will receive primary consideration by the OCMI for the allocation of time and personnel so that any problems can be identified while the unit is in the most advantageous situation to apply corrections.

d. The variety of designs and arrangements presented by existing uninspected MODU's makes it impractical to prescribe

detailed standards for all existing units. The procedures followed to implement this NVC must provide the necessary flexibility. Items which must be taken into consideration in applying this NVC are listed below. Categorizing units into groups to which the same items apply will be of value during the inspection process. These items are:

- Type
- Builder
- Model
- Date build
- Classed by ABS or other classification society
- Load Line assignment
- Operating history (including geographical areas)
- Present location

e. *Issuance of the Original Certificate of Inspection.* The intent of the original inspection of *existing uncertificated units* is to identify and commence correction of any unsafe conditions and/or equipment deficiencies and to issue the unit an original Certificate of Inspection. A reasonable period of time will be permitted to correct minor deficiencies. Those items directly affecting personnel safety and health will require immediate attention to correct the unsafe condition. Extensive deficiencies, such as those involving structural aspects or equipment may require up to two years to remedy. Additional times may be allowed if repair facilities are not available to coastal areas adjacent to the unit's area of operation. Where manifestly unsafe conditions are found, the OCMI may require that the unit discontinue operations until such conditions are corrected. If the owner or operator feels aggrieved by the decision of the OCMI, the appeals procedures of 46 CFR 2.01-70 are applicable.

f. Questions concerning this NVC should be referred to the Commandant (G-MVI).

SUBCHAPTER J—ELECTRICAL ENGINEERING

PART 110—GENERAL PROVISIONS

24. By adding a new § 110.01-10(g) to read as follows:

§ 110.01-10 Authority for regulations.

* * * * *

(g) *Mobile offshore drilling units.* The citation regarding authority to prescribe requirements for mobile offshore drilling units is in Subchapter I-A of this chapter.

PART 111—ELECTRIC SYSTEM: GENERAL REQUIREMENTS

25. By adding a new § 111.05-(d)(22) to read as follows:

§ 111.05-5 Plan approval.

* * * * *

(d) * * *

(22) For tank vessels, mobile offshore drilling units, and other vessels carrying hazardous materials as indicated in § 111.80-5, plans showing the location of each item of electrical equipment that is in a hazardous location. Plans must include a symbol list and manufacturer's name and identification.

* * * * *

26. By adding a new Subpart 111.92 to read as follows:

Subpart 111.92—Mobile Offshore Drilling Units

Sec.

111.92-1 Definition.
111.92-3 Intrinsically safe electrical equipment.
111.92-5 Class I, Division 1 locations.
111.92-7 Class I, Division 2 locations.
111.92-9 Contiguous locations.
111.92-11 Electrical equipment in classified locations.

AUTHORITY: Sec. 2, 87 Stat. 418 (46 U.S.C. 86); sec. 3, 82 Stat. 341, as amended (46 U.S.C. 367); R.S. 4405, as amended (46 U.S.C. 375); sec. 10, 35 Stat. 428 (46 U.S.C. 395); R.S. 4423, as amended (46 U.S.C. 400); R.S. 4429, as amended (46 U.S.C. 407); R.S. 4430, as amended (46 U.S.C. 408); 88 Stat. 423 (46 U.S.C. 411); R.S. 4434, as amended (46 U.S.C. 412); R.S. 4462, as amended (46 U.S.C. 416); sec. 1, 73 Stat. 475 (46 U.S.C. 481); sec. 4, 67 Stat. 462 (43 U.S.C. 1333(d)); sec. 6(b)(1), 80 Stat. 937 (49 U.S.C. 1655(b)(1)); 49 CFR 1.46(b) and (n)(6).

Subpart 111.92—Mobile Offshore Drilling Units

§ 111.92-1 Definition.

As used in this subpart, "semi-enclosed location" means a location where natural conditions of ventilation are notably different from those on open decks due to the presence of structures such as roofs, windbreaks or bulkheads.

§ 111.92-3 Intrinsically safe electrical equipment.

(a) This section applies to each mobile offshore drilling unit.

(b) Only intrinsically safe electrical equipment approved for a Class I, Division 1 Location may be installed in the following locations:

(1) The internal space of each pressure vessel, tank, pipe, or gas vent of the mud circulating system between the well and the final degassing discharge.

(2) Any space in which an oil-gas-air mixture is continuously present under normal operational conditions.

§ 111.92-5 Class I, Division 1 locations.

The following are Class I, Division locations:

(a) An enclosed space that contains any part of the mud circulating system that has an opening into the space and is between the well and final degassing discharge.

(b) An enclosed or semi-enclosed location that is below the drill floor, and contains a possible source of gas release.

(c) An enclosed space that is on the drill floor, and is not separated by a solid, gas-tight floor from the spaces specified in paragraph (b) of this section.

(d) A space that would normally be considered a Division 2 location under § 111.92-7 but where combustible or flammable gases might accumulate.

(e) A location in the weather, or a semi-enclosed location, except as provided in paragraph (b) of this section that is within 1.5 m (5 ft.) of the boundary of any—

(1) Equipment or opening specified in paragraph (a) of this section;

(2) Ventilation outlet, access, or other opening to a Class I, Division 1 space; or

(3) Gas vent outlet.

(f) Except as provided in § 111.92-9, an enclosed space that has an opening into a Class I, Division 1 location.

§ 111.92-7 Class I, Division 2 locations.

The following are Class I, Division 2 locations:

(a) An enclosed space that has any open portion of the mud circulating system from the final degassing discharge to the mud suction connection at the mud pit.

(b) A location in the weather that is—

(1) Within the boundaries of the drilling derrick up to a height of 3 m (10 ft.) above the drill floor;

(2) Below the drill floor and within a radius of 3 m (10 ft.) of a possible source of gas release; or

(3) Within 1.5 m (5 ft.) of the boundaries of any ventilation outlet, access, or other opening to a Class I, Division 2 space.

(c) A location that is—

(1) Within 1.5 m (5 ft.) of a semi-enclosed Class I, Division 1 location indicated in § 111.92-5(b); or

(2) Within 1.5 m (5 ft.) of a Class I, Division 1 space indicated in § 111.92-5(e).

(d) A semi-enclosed area that is below and contiguous with the drill floor to the boundaries of the derrick or to the extent of any enclosure which is liable to trap gasses.

(e) A semi-enclosed derrick to the extent of its enclosure above the drill floor or to a height of 3 m (10 ft.) above the drill floor, whichever is greater.

(f) Except as provided in § 111.92-9 an enclosed space that has an opening into a Class I, Division 2 location.

§ 111.92-9 Contiguous locations.

An enclosed space that has direct access to a Division 1 or Division 2 location is the same division as that location, except—

(a) An enclosed space that has direct access to a Division 1 location is not a hazardous location if—

(1) The access has self-closing gas-tight doors that form an air lock;

(2) The ventilation causes greater pressure in the space than in the Division 1 location; and

(3) Loss of ventilation overpressure activates an alarm at a manned station.

(b) An enclosed space that has direct access to a Division 1 location can be considered as a Division 2 location if—

(1) The access has a self-closing, gastight door that opens into the space and that has no hold-back device;

(2) Ventilation causes the air to flow with the door open from the space into the Division 1 location; and

(3) Loss of ventilation activates an alarm at a manned control station; and

(c) An enclosed space that has direct access to a Division 2 location is not a hazardous location if—

(1) The access has a self-closing, gastight door that opens into the space and that has no hold-back device;

(2) Ventilation causes the air to flow with the door open from the space into the Division 2 location; and

(3) Loss of ventilation activates an alarm at a manned control station.

§ 111.92-11 Electrical equipment in classified locations.

Electrical equipment and devices installed in spaces made non-hazardous by the methods indicated in § 111.92-9 must only be essential equipment.

26. By adding a new Subpart 111.94 to read as follows:

Subpart 111.94—Mobile Offshore Drilling Unit Industrial Systems

§ 111.94-1 Industrial systems.

A system on a mobile offshore drilling unit that is used only for the industrial function of the unit and meets the National Electrical Code need not meet this subchapter except—

(a) The Underwriters' Laboratories, Inc. standards in § 110.10-1(e) of this subchapter;

(b) NEMA standards in § 110.10-1(c) (1) and (2) of this subchapter;

(c) Section 111.05-5—Plan approval;

(d) Section 111.05-15—General considerations;

(e) Section 111.60-25(f)—Ship structure as a conductor;

(f) Section 111.60-30—Engine starting;

(g) Subpart 111.92—Mobile offshore drilling units; and

(h) Cables that penetrate a deck or bulkhead must—

(1) Be installed in accordance with § 111.60-1(k); and

(2) Meet the flammability test requirements of Section 18.13.5 of IEEE Std. No. 45.

PART 112—EMERGENCY LIGHTING AND POWER SYSTEM

28. By adding a new § 112.05-10 (e) and (f) to read as follows:

§ 112.05-10 Emergency lights.

* * * * *

(e) On a mobile offshore drilling unit, the distribution panels required in paragraph (b) of this section may be in the control room.

(f) On a mobile offshore drilling unit, the switches required in paragraph (c) of this section may be in the control room.

29. By adding a new § 112.15-5(c) and revising § 112.15-5(f) to read as follows:

§ 112.15-5 Final emergency source leads.

* * * * *

(c) Each electric blow-out preventer control system on a mobile offshore drilling unit.

* * * * *

(f) One of the fire pumps, if dependent upon the emergency generator for its source of power to comply with Part 34 of Subchapter D (Tank Vessels), Part 76 of Subchapter H (Passenger Vessels), Part 95 of Subchapter I (Cargo and Miscellaneous Vessels), or Part 108 of Subchapter IA (Mobile Offshore Drilling Units) of this chapter.

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PART 113—COMMUNICATION AND ALARM SYSTEMS AND EQUIPMENT

30. By adding a new § 113.25-5(e) to read as follows:

§ 113.25-5 Operation.

* * * * *

(e) Each mobile offshore drilling unit must have a manually operated contact maker for the general alarm system—

(1) In the main control room;

(2) At the drilling console;

(3) In the space that has the feeder distribution panel;

(4) In the wheelhouse if a wheelhouse is installed; and

(5) In a location that is as far as practicable from each other contact maker.

(Sec. 2, 87 Stat. 418 (46 U.S.C. 86); sec. 3, 82 Stat. 341, as amended (46 U.S.C. 367); R.S. 4405, as amended (46 U.S.C. 375); sec. 10, 35 Stat. 428 (46 U.S.C. 395); R.S. 4423, as amended (46 U.S.C. 400); R.S. 4429, as amended (46 U.S.C. 407); R.S. 4430, as amended (46 U.S.C. 408); 88 Stat. 423 (46 U.S.C. 411); R.S. 4434, as amended (46 U.S.C. 412); R.S. 4462, as amended (46 U.S.C. 416); sec. 1, 73 Stat. 475 (46 U.S.C. 481); sec. 4, 67 Stat. 462 (43 U.S.C. 1333(d)); sec. 6(b)(1), 80 Stat. 937 (49 U.S.C. 1655(b)(1)); 49 CFR 1.46 (b) and (n)(6).)

Dated: November 21,1978.

J. B. HAYES,
Admiral, U.S. Coast Guard
Commandant.

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